The Complete Home Landscape

Arthur J. Jennings

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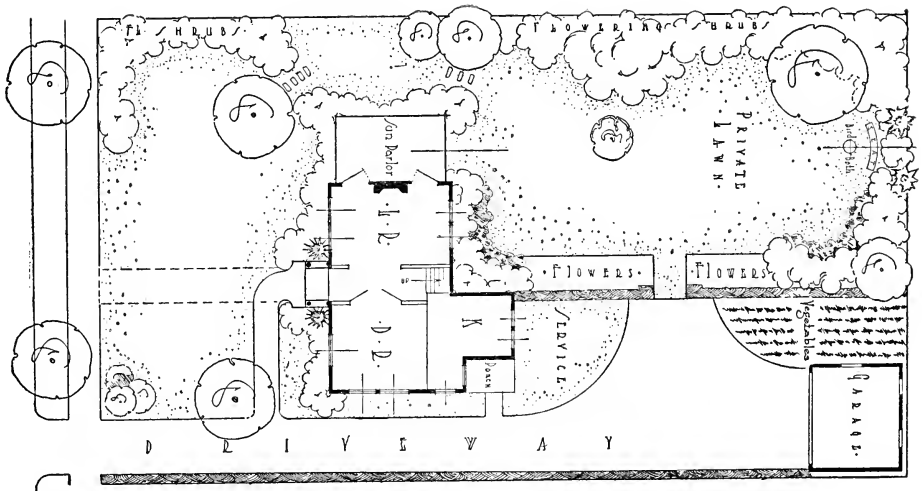
COMPLETE HOME LANDSCAPE



FRONTISPIECE—A suggested plan for the arrangement and planting of a plot to produce maximum convenience and enjoyment. Such grounds transform a house into a real home, wherein privacy can be enjoyed in the garden no less than indoors. The shape and dimensions of any property would have much to do with the design and the materials employed, but the principles would remain the same

THE COMPLETE HOME LANDSCAPE

By

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IN COLLABORATION WITH

LEONARD H. JOHNSON

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INTRODUCTION

THE aim of this book is to answer explicitly any question that might arise relative to the creation and maintenance of the home grounds, from the time of selecting the site for the house to the occupancy of the finished home. The word "home" used in this sense, comprises the grounds as well as the dwelling and service buildings.

This does sound ambitious, but we believe there is a demand for such a book, and therefore respectfully submit this one, in an endeavor to fill the need. The information here contained is the result of over twenty years joint experience and study of the subject, and of constantly observing and acquiring knowledge from numerous actual plantings.

Unfortunately, the average property owner has been led to believe that the word "Landscape" refers only to large areas or estates, and as a natural result, feels that his own problem is too small to justify his seeking professional advice. As a matter of fact, it can be said that the smaller the property the more difficult it is to treat it correctly. With this in mind, we have incorporated in this work all details, common (or uncommon) to the city or suburban lot.

Our conception of the mission of the landscape man is "to promote the comfort and enjoyment of the majority (the urban dwellers) who as a general rule have little or no access to rural scenery, by introducing into their very homes, that peaceful atmosphere and quiet scenery found in nature." Indeed it is only when each small property owner becomes personally interested in beautifying his surroundings that we can look forward to a national improvement in home and civic planning and planting.

Without the valuable assistance of Mr. L. H. Johnson, it would have been well-nigh impossible to make this volume as useful and interesting as the author hopes it is. The value of the illustrations cannot be overestimated, and their clearness makes them self-explanatory. This is particularly true of the construction work sketches, although the author is also greatly indebted to Mr. Johnson for much of the text matter dealing with that particular phase of the subject.

For the logical arrangement and general appearance of the book, the author is indebted to Mr. E. L. D. Seymour, whose close cooperation has been a great help.

Fig. 1.—Sketch and plan of a simple shrubbery border flanking a gate approach to a garden.
Key to plants used in the plan is as follows:
(1) 2 Lombardy Poplars, (2) 2 specimen Vanhoutte's Spiræas, (3) Japanese Storax, (4) Double French Lilac, (5) Lemoine's Mock Orange, (6) Cork-bark Spindle Bush, (7) Lace Bush, (8) White Fringe, (9) Dwarf Deutzia, 10 Double Japanese Snowball, and (on arch) 2 Dorothy Perkins Roses.

PRINCIPLES OF DESIGN

ALL landscape work, no matter what its size or where it is located, to be a success as an artistic creation must have four dominant qualities, namely, Unity, Variety, Character and Finish. The surest way of attaining the effect aimed at is to be simple in treatment. The true artist aims to produce the best effect by using the smallest variety of kinds in as limited a quantity as possible.

To be permanent, the work must be done step by step in proper sequence as outlined here.

All good views should be preserved. Sometimes they can be improved or emphasized by "framing the picture" with trees. Never fell a tree until the step is found really necessary—but then go ahead and cut it down rather than mar an otherwise good effect or view.

UNITY. Prof. L. H. Bailey very aptly defines unity as applied to the landscape as follows: "Every yard should be a picture, that is, the area should be set off from every other area, and it should have such character that the observer catches its entire effect and purpose without stopping to analyze its parts. The yard (home grounds) should be one thing, one area, with every feature contributing its part to one strong and homogeneous effect." No one item should be individually conspicuous, but all should help in creating the quiet harmonious whole.

VARIETY. When used in this sense we do not mean there should be many kinds of plant material, but there can and should be variety in sky line or contour, in texture of foliage, color, lawn surface, without marring the unity of the place. For instance, while all harsh color contrasts should be avoided, a dash of color here and there among the green can be nicely blended and will add interest. The various characteristic forms of growth, such as horizontal branches against the erect or vertical, make pleasant breaks and give character as well.

CHARACTER. This quality consists largely of being individual or "different" from other places similar in size and outline. It is not easy to define, as the character of a planting is generally the unconscious "touch" of the maker. Just as the "stiffness" or "restfulness" of a room is decided mainly by the appearance and placement of furniture,

so character of the garden is dependent on selection and arrangement of material. Each tree or plant should be carefully selected to harmonize, and so placed that it will merge into the general planting scheme.

FINISH. A beautiful garden or lawn cannot retain a permanent, finished effect unless it has the touch of one who is really a lover of plants; one who lives with them, watches their development, and knows their names as well as their appearance. This interest and knowledge is quickly acquired by working among your plants and trees, and personally selecting specimens. Once the flame of enthusiasm has been lighted, you will find yourself observing every garden you pass and taking note of every unusual plant, picturing a place in your garden where it would "just fit." When you have this interest, the shrubbery and flower beds will be kept edged, the lawn kept neatly cut, the hedges evenly clipped, the weeds kept out, and in general, cleanliness and tidiness will prevail. This is the "finish" of the garden.

STYLES OF LANDSCAPE DEVELOPMENT

THERE are three main types or styles of gardens which are classified according to the effects they respectively create. These are the Architectural, the Natural and the Picturesque.

ARCHITECTURAL, which is distinctly formal (sometimes in a clear-cut geometrical design) is really a prolongation of the architectural lines of the house. In such a garden the trees are planted in rows or otherwise symmetrically; the ground, if uneven, is terraced; and garden features such as statues, vases, etc., are in evidence.

NATURAL. As the name indicates this style is simply copying Nature; it is the other extreme from the architectural garden. Plant material is used in masses of similar kinds, planted irregularly in borders with deep bays and promontories, so that the inside line is sinuous and so the front line of shrubs merges into the lawn without an abrupt transition. The trees also should be planted in irregular groups, not haphazard, but where they are needed, so that the whole effect gives the impression that the location was selected because of the appropriateness of the planting. The material should be chosen especially to produce this effect, and all that would tend to stiffen the informality by reason of its set or clearly defined outlines should be omitted.

PICTURESQUE. This style can be typified by the Japanese garden. In short, it is applied to create effects that are unusual by means of vivid contrast, odd shapes, and a very rugged ground surface.

In selecting the style of garden to be made, due consideration must be given not only to the house architecture, but also to the land surface. For instance, where there are abrupt declivities and bold rocks cropping out, dwarfed natural plant life, and other such evidences of the unusual, the picturesque style can best be employed. While this style is rather uncommon (because the necessary setting is rarely met with) it is most interesting when correctly treated.

The architectural style is suggested when the house is well balanced and symmetrical. On larger places, the immediate surroundings of such a house can be treated in this formal way and the outlying areas made informal and natural. In such a case, however, the two parts

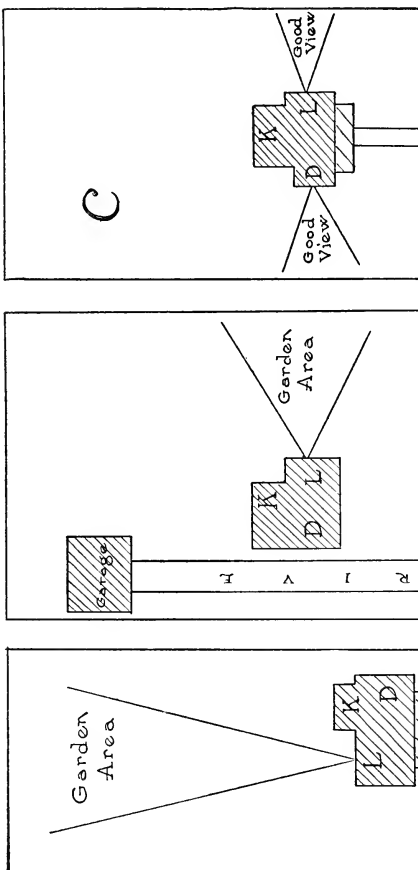


Fig. 2.—Place the house on the property so as to afford maximum pleasure and comfort. In (A) above, the house is placed well forward to provide ample space for private grounds in the rear; in (B) it is placed at one side to permit of lawn and garden space on the living room side; in (C) a central location insures pleasant views from both living and dining rooms

must be regarded as two entirely separate units and therefore be distinctly divided.

The most commonly met with style of landscape is the natural For this the native growth on similar soil and in similar locations should be studied, and an effort made to reproduce the natural effect. If your grounds are low and more or less moist, only moisture-loving plants should be used; the composition of the soil will also enter into the selection of the plant material. In arrangement the planting should consist of masses containing a number of plants of the same kind rather than a few each of many different kinds.

It is taken for granted that all exotic and grotesque forms of plants should be omitted from the natural planting, but this does not mean that there is to be monotony. There is ample scope for such a selection that the natural garden will be full of interest and beauty every day in the year—just as Nature is. The lines of planting should be in long, easy, graceful curves; bays should be left in the shrubbery borders; and the trees in groups need not be well-shaped. Here and there a slightly crooked stem or slanting effect is quite in keeping. In a wild clump of Birch who ever saw each tree a perfect, symmetrical specimen?

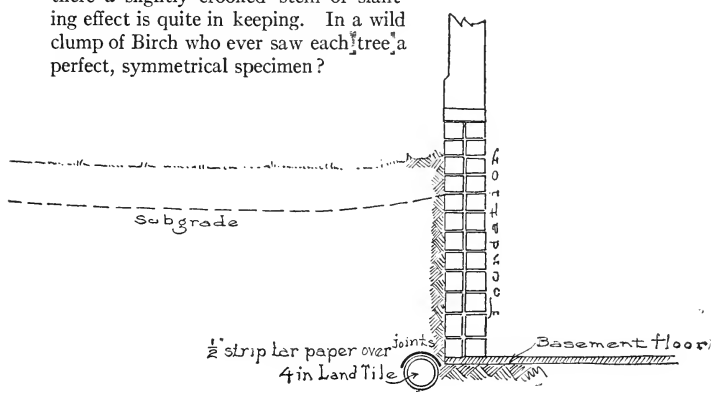


Fig. 3.—The subsoil should be graded just as carefully and almost as accurately as the finished surface. This also shows how a line of drain tile can be laid to keep water from seeping into the cellar.—See pages 11 and 16

LANDSCAPE CONSTRUCTION

LOCATING THE HOUSE

THE house should be so placed on the property as to give the maximum pleasure and comfort to the owner or occupants. It should provide for good views and scenes from the interior as well as convenient access and good circulation to all parts of the property (Fig. 2). Furthermore, the practical aspect must not be overlooked—the matter of drainage—so the house should be set on a rise where the natural grade drops away in every direction. It is not necessary that the highest spot be selected, but it is most important that natural drainage be assured.

Unfortunately the modern trend is to build all small houses in straight rows facing the street. While it is desirable that the best architectural features be in evidence, it is not necessary that the house face the street in every instance. For instance, would it not be much more enjoyable if the service or kitchen side of the house faced the street, so as to make the rear grounds quite private and the service side of easier access to the street? In such a case the building line can be maintained, but perhaps more attention might be paid to the architectural lines of that side of the house. In the northeastern states the best exposure is facing southeast, but if there happens to be an unusually good distant view in some other direction, the house should be built so that the living rooms command a good perspective of the picture.

However, inasmuch as the majority of small houses are built to face the street, it will, perhaps, be best to take up the subject from that

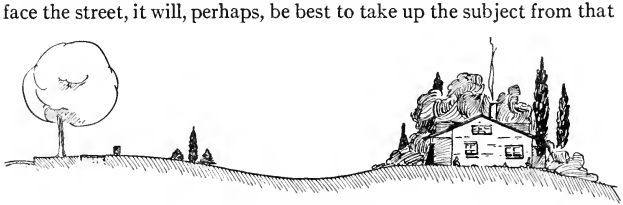


Fig. 4.—When the house sets below the grade of the street, a gracefully graded lawn—as shown here—adds much to the appearance of the property. In all cases the ground in the immediate vicinity of the house should slope away from it

standpoint. It is preferable to set the house a reasonable distance back from the street, allowing in front a good sweep of lawn that can be planted artistically, as the true entrance of the home should be. Furthermore, it is most advisable that the kitchen side be nearer the property line than is the case with a house in the center of a lot. This allows a good garden and private lawn area, and reduces the service yard to its proper proportions—which is the minimum area that permits of maximum service.

Clearing the Land

PRESUMING the property in question to be covered with undergrowth, brush, and trees of all sizes, it will have to be cleared. After locating the spot for the house, the best trees, standing in approximately the right places (see page 55) should be marked that they may be protected against damage. The same may be done with existing shrubbery. All other plant material should then be cleared off, not by simply cutting it off, but by taking out the entire root systems. All small bushes can be grubbed out by hand, but if the bushes are large and vigorous, they will have to be pulled out with horses and a chain, the latter to be wrapped several times around the bush. Larger trees can be first cut down to four or five feet, then dug around and pulled out with a block and tackle fastened to a large tree. (But be sure to protect this anchor tree from injury.)

Old stumps that cannot be taken out in this way can be blasted with dynamite. When using dynamite it is advisable to cover the

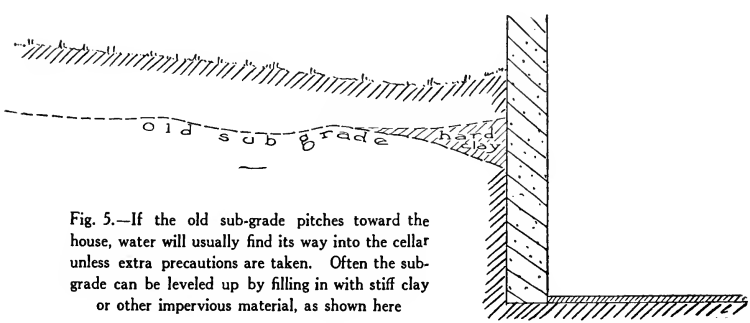


Fig. 5.—If the old sub-grade pitches toward the house, water will usually find its way into the cellar unless extra precautions are taken. Often the sub-grade can be leveled up by filling in with stiff clay or other impervious material, as shown here

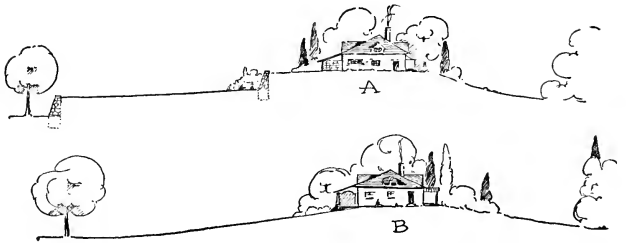


Fig. 6.—If the house is located above the street level and the grade is quite steep, the approach and lawn may be treated as in (A) above by providing a series of terraces and retaining walls. However, in general, a treatment such as shown in (B) is much to be preferred

charge with a sheet of old canvas or something similar to keep the particles of earth and wood from flying. Before placing the stick of dynamite, make a hole with a crowbar well under the stump; after inserting the fuse and cap in the explosive, insert the resulting cartridge in the hole, letting it lie on a solid bottom if possible as the tendency is to shoot downward. Then fill the hole with stiff clay, tamping it in firmly with a wooden stick—and it is ready for firing. The size of the charge needed depends upon the size and rigidity of the stump and must be learned through experience, but one stick will do wonders.

In crowded places where it is not permissible to blast, a stump will have to be dug out by hand. It is often possible to take it out in sections, by splitting it with wedges after the roots have been cut and loosened.

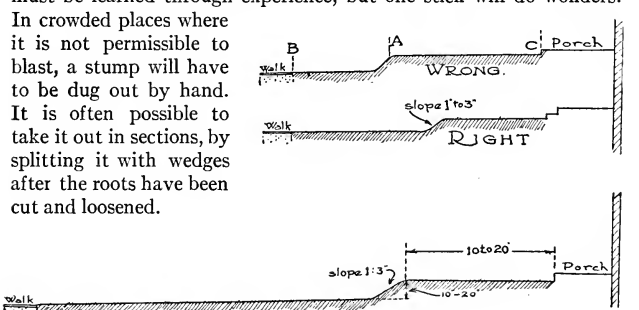


Fig. 7.—When the house sets well back from the street, a terrace can often be used to good advantage. But it must be well proportioned to produce a favorable effect. The distance A-B in the two smaller sketches should always be as great as or greater than the distance A-C, as illustrated in the larger sketch at the bottom

Grading

THE next step is to study and work out on paper the changes in grades, if any are necessary, and to designate the planting areas, walks, drives, house outline, division of property, lines of tile that may be necessary for drainage, and all such features, as well as existing trees, etc. After the problems are worked out satisfactorily on paper, the actual work can be done by following the plan. Terracing and the building of permanent features such as retaining walls, pools, and garden steps should be done at this time. Their actual construction will be described later.

Where there is any cut or fill to be made the topsoil should first be stripped off and piled in a convenient place. If it is found that under-draining is necessary, the tile can be laid at this time. (For methods of drainage see under lawn making, page 15). The stripping can be done with a scoop on larger places, or with a wheelbarrow, where but little is necessary. We are now dealing with the subsoil which must be graded just as carefully as the finished surface (Fig. 3). The purpose of grading is to insure proper drainage, improve the contour of the land surface, and give a good setting to the house. If the house is set lower than the street level, the drop from the street might be slightly emphasized for a distance and then the ground

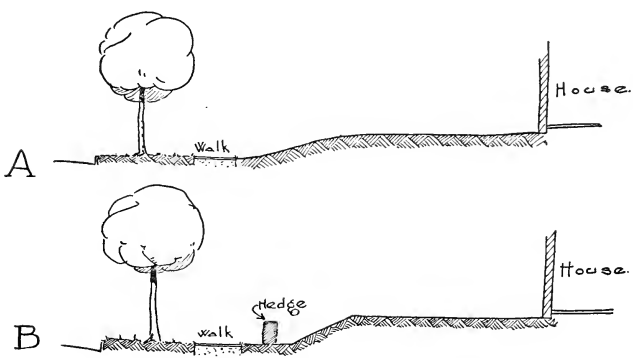


Fig. 8.—Simplifying the grading of the average suburban lot in which the ground slopes from the house down to the sidewalk. A combination of gentle grades is easier to care for and looks better than abrupt changes crowded into a small space (see page 13)

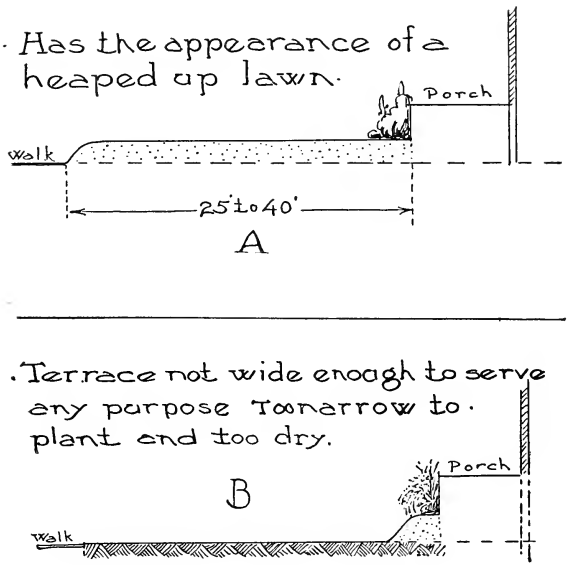


Fig. 9a.—Possible treatments of a slight rise in a narrow suburban front lawn. See facing page

graded *up* toward the house. In this way good drainage is provided and the house is made to set apparently higher, with a tastefully graded front lawn (Fig. 4). Should the natural grade pitch right down to the house, it is advisable to firmly pack stiff clay against the foundation walls so that water will not lie against them and seep into the cellar (Fig. 5).

In a case where the house site is considerably above the street level, the area between can be either terraced or sloped gradually (Fig. 6). The terrace is recommended when the ground is more or less rugged, with wide variation in levels, as a level space must be provided for the house. Where this is done, the terraces should be as wide as is feasible—not less than ten or twelve feet—not only for the sake of

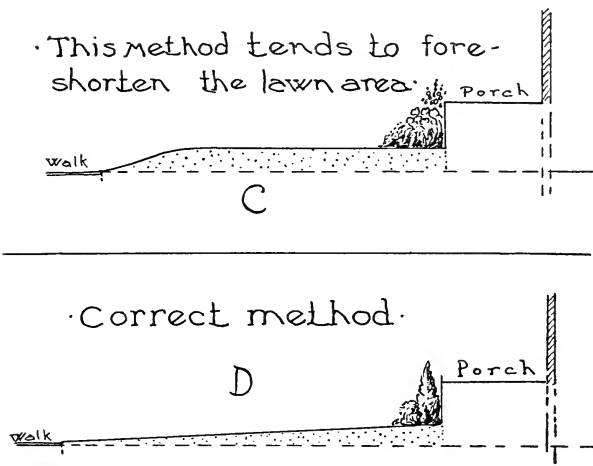


Fig. 9b.—(A), (B) and (C) are all less desirable than (D). See facing page

beauty but also for utility, as walking on a wide terrace gives a sense of security. The distance from the bottom of the terrace or retaining wall to the edge of the grounds should, however, be considerably greater than the width of the terrace itself (Fig. 7).

Generally speaking, a gently rolling surface is much more desirable and easier to maintain than a terraced area, especially if the place is at all large. The average high city lot can be graded so that the surface slopes toward the street at an inclination of about one inch to one foot, then at the sidewalk this slope can be increased, making the two grades merge. In this way the familiar difficulty of cutting the grass on the terrace is overcome or rather eliminated, and the appearance is decidedly better (Fig. 8A). If the house is only about three feet or less above the street level, the best treatment is to make a gradual slope from the sidewalk up to the house level. In Fig. 9, (A), (B) and (C) illustrate common methods of grading the front, all of which are condemned for various reasons; (D) is decidedly better.

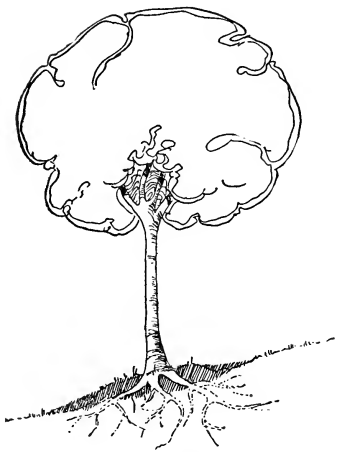


Fig. 10.—If, in grading, the general level is lowered where valuable trees stand, gentle mounds should be left around and over the roots of such specimens as shown here in cross section

All rubbish and large stones should be taken away, then, when the subsoil is graded, the topsoil can be spread. It is a good idea to excavate a little (about eighteen inches) in the planting areas and fill in with good soil. The matter of fertilizing and improving soils is discussed under "Lawn Making" (page 18). Sometimes when the revised grade is considerably above the old surface, it is desirable to save an old tree, too large for transplanting. This can be accomplished by building a "well" of bricks or large stones around the base to allow for circulation of air (Fig. 11). When the new grade is below the old, gently mound up the soil above the roots of the tree for a good distance from the trunk (Fig. 10).

MAKING THE LAWN

THE lawn or greensward is the ground or "canvas" upon which the picture is to be produced. It is, in effect, the carpet of the outdoor living room, and it is therefore of prime importance that it should be as perfect as possible. A poor greensward will mar an otherwise good picture; and on the other hand, a good sweep of greensward will detract attention from a mediocre planting. The care in making and maintaining the lawn should therefore be in keeping with its importance.

DRAINAGE

On the average small property underdraining is rarely necessary, but all low-lying places should assuredly be properly tiled. First of all, a good outlet must be located, such as a ditch or creek, or even the sewer. The mouth of the drain—that is, the end tile—should be placed about two feet above the mean water level in the outlet (Fig. 12). From this point the drainage system should be laid up to the head or highest point touched by the drain. Three-inch tile is sufficiently large for almost any work, and it should be laid about three to three and one-half feet deep, following the lowest land. Generally one central line with laterals is all that is necessary, but where an extensive operation is needed the main lines are placed as near together or as far apart as the conditions warrant.

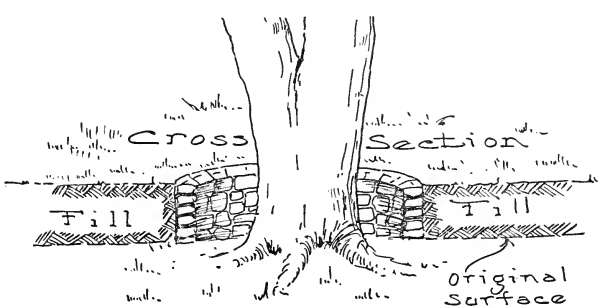


Fig. 11.—If the grade must be raised about a valuable tree that it is desired to save, make a "well" of bricks or large stones around the trunk to prevent smothering it

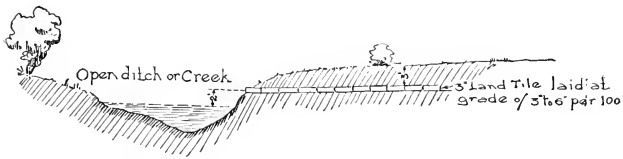


Fig. 12.—A good outlet should be provided for every main drainage line. The tile should follow the low ground, about three feet below the surface, and the end should open into a ditch or sewer two feet above the mean water level to prevent backing up and flooding

The narrow ditch is dug with the bottom even so that the tiles can be laid securely. They must be laid or fitted tightly together, end to end, but not cemented or joined in any way. The result desired is that water will filter in through the joints, although soil cannot enter to clog the drain. A fall of approximately six inches in 100 feet will carry off all surplus water, and even less than this will serve the purpose, providing the drain is laid correctly. Laying a drain with only a very slight inclination is a task for a skilled engineer and is best left to such as are capable and experienced in these matters.

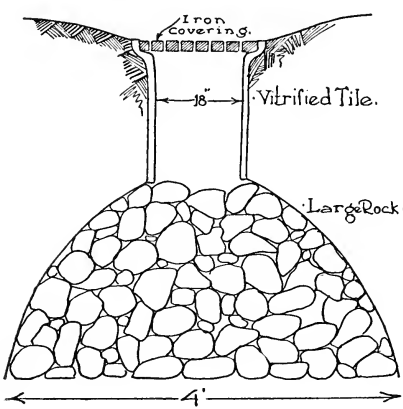


Fig. 13.—A simple but effective type of dry well for use in connection with walks, drives and paved areas. The dimensions given are satisfactory where a limited amount of water is to be taken care of

A line of tile laid at the bottom of the cellar foundation will carry off water that might otherwise seep through the walls (Fig. 3). Where there is only a small amount of surface water to take care of, a dry well can be easily constructed, sufficiently large to handle the surplus. Figures 13 and 14

illustrate suitable methods more clearly than word descriptions. The style shown in Fig. 13 is effective on walks, drives, and paved areas, while that shown in Fig. 14 can be used on the lawn.

SOIL PREPARATION

The method followed in preparing the soil depends upon the richness of the natural deposit, but as most soils can be improved, the following directions can be applied in practically every case.

It can be stated generally that all heavy clay soils are benefited by working in an inch or more of sand or road grit; for very sandy soils the same quantity of clay or loamy clay should be applied. All drainage and grading being finished and the topsoil being in place, spread a heavy layer (about four or five inches) of rotten manure over the ground. This will be approximately one-half ton to one thousand square feet, or twenty tons to an acre. Plow or dig this under deeply, and then scatter slaked lime, using 100 pounds to 1000 square feet, which is about two tons to an acre. If crushed limestone is used, double the quantity in order to make the treatment equally effective. The lime should be raked or harrowed in thoroughly so that it is scarcely visible. Let the land settle for ten to fourteen days, when it should be raked repeatedly until the surface is friable and free from lumps or stones. This thorough raking is most important in the formation of good turf, and represents time and effort well spent.

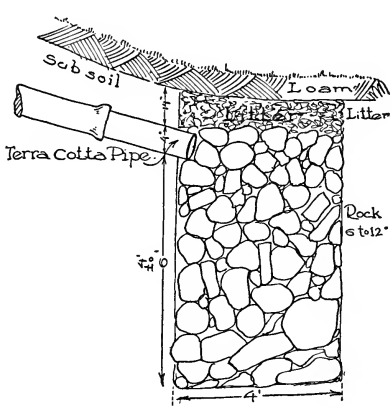


Fig. 14.—Type of dry well that can be constructed in a lawn to take care of surplus surface water, to prevent washing and marshy spots, etc.

SOIL PREPARATION ON A LARGE AREA

Where an extensive lawn is to be made and where durability is a prime requisite, more time must be allowed in the preparation of soil, and a more complete treatment given, the essentials of which are here outlined. After plowing under the manure, and harrowing in the lime as before (which in this case should be done in August) the area should be sown with Rye, using one and one-half bushels to an acre, with twenty pounds of Hairy Vetch added for Winter cover. In the Spring, just as soon as the ground is dry enough to work, plow under the Rye and Vetch and apply a good fertilizer at the rate of about eight hundred pounds to an acre. The following mixture contains all the desirable properties:

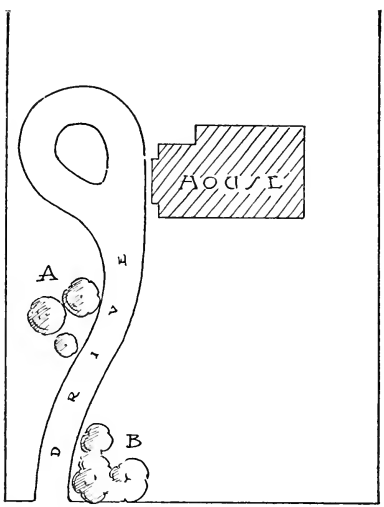


Fig. 15.—Groups of trees or shrubs, as (A) and (B), should be provided as "excuses" for curves in a drive that is deliberately diverted from a straight line
(See page 25)

300 lbs. acid phosphate.
200 lbs. cottonseed meal.
100 lbs. bonemeal.
50 lbs. nitrate of soda.
50 lbs. kainite.

Harrow this mixture in thoroughly, then sow Soy Beans or Cow Peas at the rate of two bushels to one acre. This crop will be in bloom during July, when it should be turned under. Then cultivate the ground lightly for a month or more. By this time the soil is settled, and should then be raked repeatedly, as recommended previously, preparatory to sowing the lawn grass seed.

The best time for sowing is early May or

late August. The disadvantage of the Autumn sowing is the possibility of thunder showers washing the seed into small depressions, but if this can be overcome the Autumn is really to be preferred. The seed germinates quickly, becomes well established before frost, and is quite tough enough to withstand the heat of the following Summer. If sowing is done in Spring, it is advisable to include a quick growing grass (Italian Rye) to shade the other while young and tender. Another method is to cover the newly seeded lawn with light burlap or cheesecloth.

SEEDING

Select a still, preferably dull day for seeding. Mark the area to be seeded in strips of a width that can be reached with a sweep of the arm. Go over the ground twice, seeding in opposite directions, so as to insure a perfectly even stand. Don't be afraid of sowing thickly—five pounds to one thousand square feet, or about six bushels or more to an acre is not too much. Remember it is much more difficult to patch up a spotty lawn than it is to secure a good stand at first. In shady places where a different mixture of seed is used this quantity can be increased slightly.

Then rake the seed in lightly and go over the lawn with a light roller. It is then most important that the soil be kept moist to induce

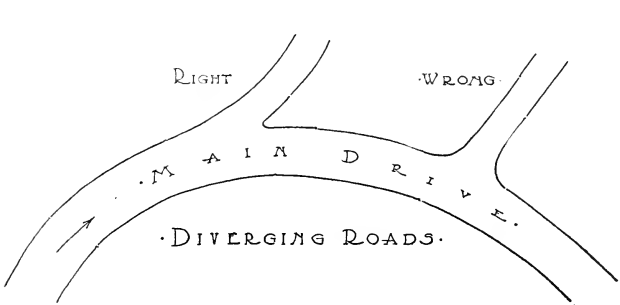


Fig. 16—Where traffic is practically all in one direction, a branching road, drive or walk should join the main highway at a tangent so as to create a natural, easy curve

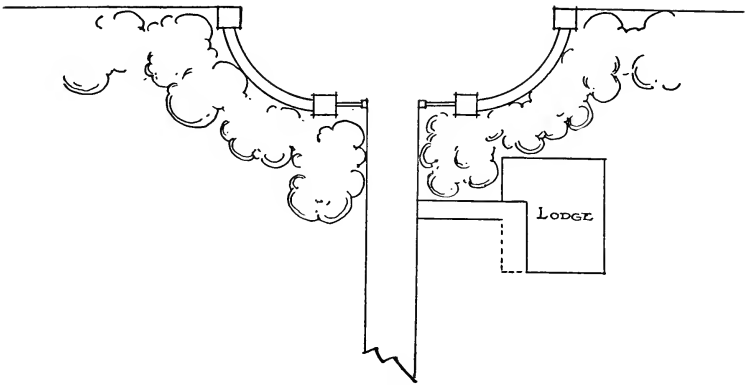


Fig. 17.—A formal entrance to an estate in which imposing pillars, sections of curved fence or wall and a lodge contribute to the effect. The setting in of the gateway makes the entrance safer than if it were flush with the roadway

germination. It is best to water slowly, with a fine spray and for a long time so that the soil is moistened to a depth of five or six inches. A top dressing of really old, well rotted cow manure is very beneficial in keeping the surface moist; it prevents "baking" besides adding nourishment.

LAWN GRASS SEED

After considerable experimental work it has been proved conclusively that Kentucky Blue Grass is the best turf forming grass for wear and general use. This, however, takes some time to become firmly established (until the second season) and therefore a mixture containing quicker growing kinds of grass seed is advised. While there are numerous mixtures offered, the bulk of every one should be Kentucky Blue Grass, and the following has been used with good success:

Kentucky Blue Grass.....5 parts by weight
Recleaned Red-Top.....2 parts by weight
Rhode Island Bent.....2 parts by weight

To this mixture can be added some White Clover, and sometimes

one part of Italian Rye grass is included, as it germinates and grows quickly, shading the ground while the other seed is growing. The best seed is most economical, and it should be bought by weight rather than bulk. Good seed weighs from twenty-two to twenty-five pounds to the bushel.

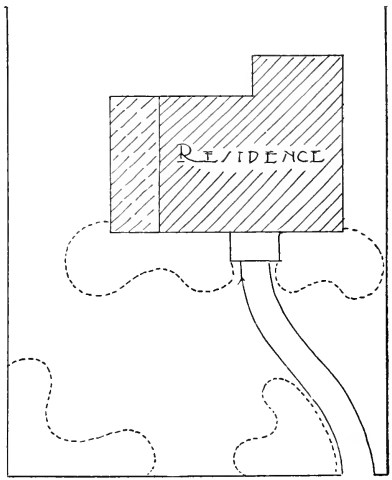


Fig. 18.—A simple but attractive and satisfactory arrangement of the walk and its border planting when the house is located at one side of the property

FOR SHADY PLACES

The following mixture of grasses, used in equal proportions (by weight) will be found very good for shady situations. Alternative kinds are given, but the first named should be used whenever it can be secured:

Various-leaved Fescue, or Red Fescue
Creeping Bent, or Rhode Island Bent
Kentucky Blue Grass

If the true Wood Meadow grass (*Poa nemoralis*) can be obtained it can be substituted for both the Bent and Fescue grasses. In a very densely shaded place it is sometimes impossible to get a good stand of any permanent grasses. In such a case Italian Rye grass can be sown each Spring and a new and practical lawn made each year. This repetition is necessary as the Italian Rye grass is an annual.

CUTTING

As soon as the grass is well started the area should be rolled lightly to firm the soil about the roots. Allow the grass to grow to about three inches high, then cut with a freshly sharpened lawn mower, setting the blade high. The clippings may be left on the lawn. There-

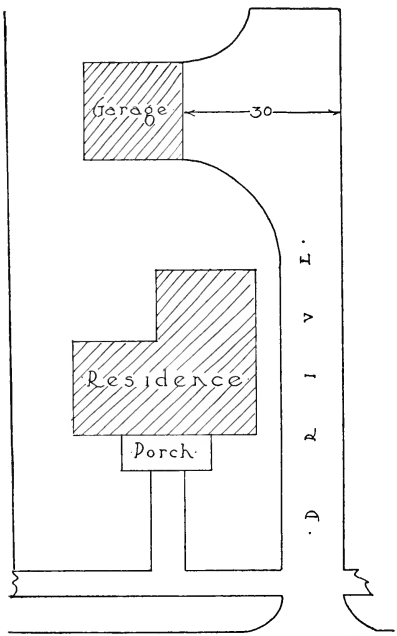


Fig. 19.—If the house is not too far from the street, the walk and drive can be kept quite separate but parallel, as shown here

after, cut as often as necessary, lowering the blade as the lawn becomes established.

FERTILIZER AND WINTER COVER

If it is possible to secure really well rotted, long manure, spread a half-inch layer over the lawn in late Fall or early Winter, after the ground is frozen. This can be raked off in Spring and the lawn rolled. As a top dressing, sheep manure is good, or nitrate of soda mixed with an equal amount of acid phosphate and one-fourth that amount of kainit. This should be applied in early Spring before growth commences, at the rate of about eight pounds to one thousand square feet.

TO ELIMINATE WEEDS FROM A LAWN

Experiments recently terminated have proved that by creating an acid soil all weeds will be caused gradually to disappear, and certain lawn grasses caused to thrive. The best of these grasses are Creeping Bent, Rhode Island Bent, Red Top and Red Fescue. They can be used at the same rate as other seed mentioned, namely, about five pounds to one thousand square feet. To bring about the desired condition of the soil when making a new lawn, omit the lime and, in fact, any material or fertilizer that may tend to sweeten (or overcome the

acidity of) the soil. In the place of such fertilizer use the following mixture at the rate of about 800 pounds to one acre, which is approximately twenty pounds to one thousand square feet:

Acid phosphate.....8 parts by weight
Sulphate of ammonia.....5 parts by weight
Muriate of potash.....5 parts by weight

Thoroughly mix these in the proportions named and scatter broadcast in very early Spring, preferably in dry weather. Spread evenly and then soak thoroughly.

In treating established lawns, the grass seed recommended should be sown and raked in a few days after applying the fertilizer, using a larger quantity of seed than otherwise suggested. In order to maintain the acid condition of the soil, the same fertilizer must be applied each Spring, in decreasing amounts until the weeds disappear entirely. For this information the writer is indebted to the Agricultural Experiment Station of the Rhode Island State College at Kingston, R. I.

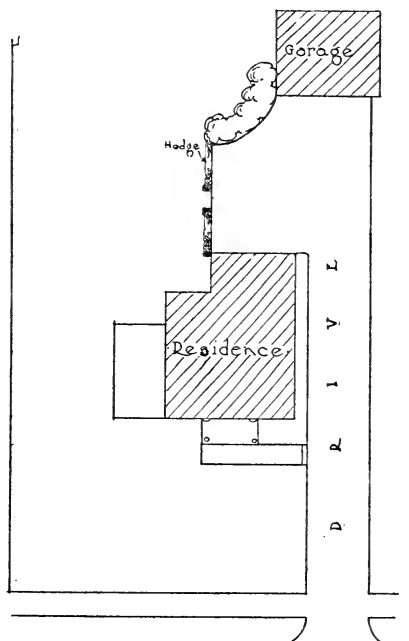


Fig. 20.—Sometimes the drive can best serve also as a walk from the street to the house. Here it is well screened from the private area of the garden at the rear of the house

TO RENOVATE AN OLD LAWN

It is not an easy matter to "patch up" an old, spotted lawn. It is most improbable that the same mixture of seed will be used as was sown originally, and hence the texture of the turf will differ. However, where it is not feasible to dig and remake the lawn, the bad spots can be improved. Fork over these places to a depth of five or six inches or deeper, taking out all stones and rubbish that may be found. Add some good, well rotted manure, scatter the proper proportion of lime (as recommended in "Soil Preparation," page 17) and rake thoroughly. The seed can then be sown rather more thickly than suggested before and the patch watered, rolled, and shaded from the sun. Another easier method of renovating an old lawn would be to rake over the impoverished places with a sharp, steel tooth rake. This will not injure the young grass that may be there, but on the other hand, will rake out old dead material. Seed can then be scattered evenly and thickly over these areas, and thoroughly rolled with a fairly heavy roller. If this work is done in the Spring and the lawn is, therefore, likely to be subjected to the hot suns, it would be well to cover the newly seeded areas with cheesecloth, burlap, or some other material to break the sun's rays. They must, of course, be kept moist.

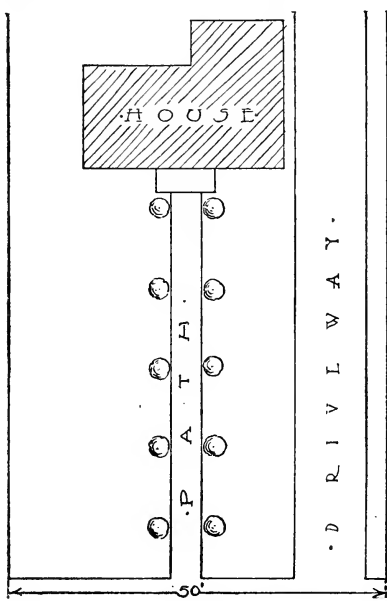


Fig. 21—Where the shape of the lot and the location and arrangement of the house combine to make a long, straight path unavoidable, the latter can be bordered by specimen plants, such as clipped Privet bushes, low evergreens, etc.

DRIVES AND WALKS

THE arrangement of walks and drives is one of the most important things to be considered when designing the layout of grounds about a home. Of course there is not a great deal of latitude here when dealing with the small city lot. In this case the drive is usually straight, running back along the side of the property to the garage (Fig. 19). One main principle must be adhered to, however, and that is that both drives and walks must be as direct as possible. On the large property, the drive may approach the house in easy, graceful curves so that a glimpse of the garden or some feature of it may be seen from certain points along the approach. It may be said here that when curves are "just made" in the drive they should subsequently be planted in such a manner as to furnish an excuse for the turn. For this purpose a clump of shrubbery or a group of trees is placed at the inside of the curve (Fig. 15). In long, straight approaches avoid the use of circles, etc. Such approaches may be planted out in straight lines and at even intervals. On the usual fifty-foot city lot the methods of running the walk to the house are limited. It should not cut across the center of the yard as this cuts up the lawn and makes it appear really smaller than it is and difficult

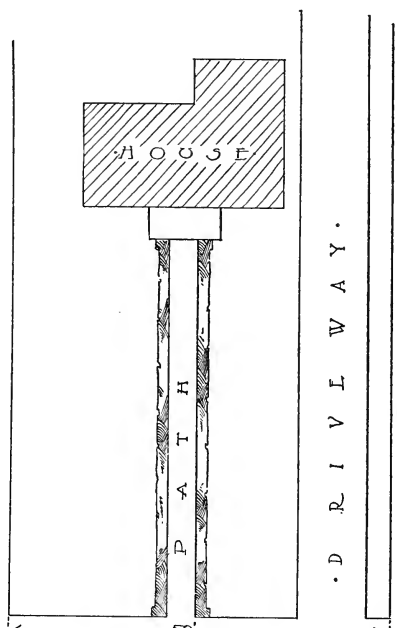


Fig. 22.—Or, if preferred, a long, straight path may have as a border a low, closely clipped hedge. Boxwood is especially good where it is hardy

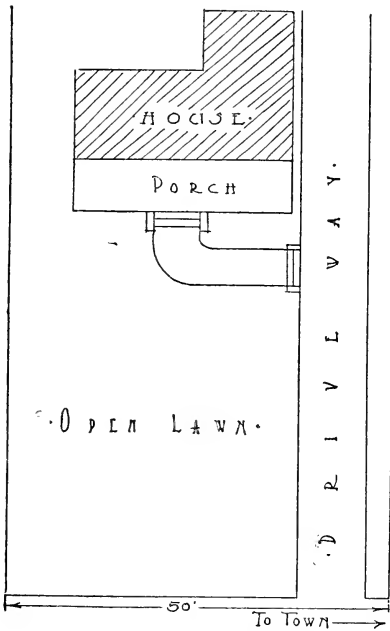


Fig. 23.—Another case in which the best solution of the approach problem seems to be the connection of drive and path. (Compare Fig. 20). Here the drive is apparently a couple of steps below the level of the lawn

to treat. It is best in such cases to either run the walk out to the side and connect with the drive, or keep it to the edge of the property running it directly to the sidewalk (Figs. 18, 20, 23 and 25).

THE ENTRANCE

THE ENTRANCE is really the first matter that should claim our attention, as first impressions of a place will probably be based on it. The walk and drive (and especially the latter) should enter the property at approximately right angles, so that travel in each direction is equally convenient. However, when the traffic is practically all to and from one direction the driveway can be made to join the highway in a natural, easy curve —on a tangent, so that it seems almost a branch of the road (Fig. 16). It is taken for granted that such an entrance would be placed on that side of the property from which the traffic comes. The entrance may be either formal and imposing (Fig. 17) with piers, iron gates, etc., or quite informal—just an opening in the planting, with or without a small garden gate. When the house is located on a hill and has considerable property in front, the drive and walk should follow the easiest contour as nearly as possible.

On a large city or suburban property where the house is centrally

located on the lot, a pleasing drive or walk may be made by the use of the semi-circular effect shown in Fig. 26. If only the drive is located in this manner it is poor design to run a wide walk down through the center thus bisecting the semi-circular area. If a walk must be made here a narrow stepping-stone walk with the grass between the stones is much more pleasing and not nearly so conspicuous (Fig. 27).

If the main entrance of the house is at the front, the drive or walk should parallel the house on that side. If at the side, the walk or drive should run close enough to the house to permit easy access to and from the door. Enough room should be left between the drive and property line to allow of some ornamental planting. If a service walk or drive is necessary it should either be made entirely for that purpose and removed from the main part of the house or it should branch off the main walk or drive as shown in Fig. 28, in which case it should be made smaller. The service drive should be so placed that living commodities, such as food, coal, etc., can be delivered easily, and, if possible, so that it does not touch the private or garden area of the grounds. Unless the house is set back at least seventy-five feet from the property front it is useless to attempt to make a turn-around in front, as the average automobile requires at least sixty-five feet in which to turn. However, if there is ample room for such a turn it should be placed on the axis of the house (Figs. 29 and 30). If a hedge borders a drive or walk it should be planted at least eighteen inches from the edge; large shrubs should be at least three feet back.

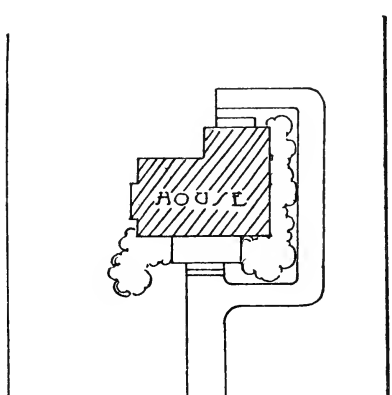


Fig. 24.—Where the path, or a branch of it, is carried around the house, leave room between it and the building for some foundation planting, if possible

On the city lot, the path leading to the rear house entrance should be so planned

as to leave a planting strip between it and the house of not less than two and a half or three feet (Fig. 24). If space does not permit this, it is better to have no planting strip at all, but to join the walk to the foundation wall, as a very narrow strip is unsatisfactory to treat and hard to keep neat. On a flat property of some size where the house is set well back from the street, a straight walk direct to the front entrance looks well, especially if emphasized with appropriate planting. On such a straight walk avoid all obstructions that would cause a detour (Figs. 21 and 22).

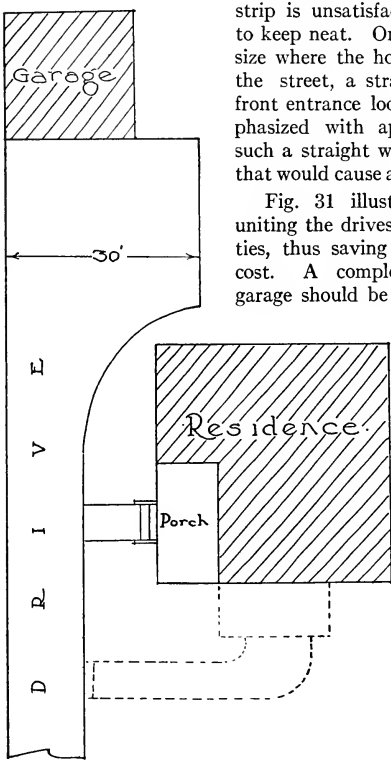


Fig. 25.—One way in which the necessary turning and backing space can be provided in the drive in conjunction with the garage, thereby saving considerable space. The dotted lines suggest another possible treatment of the house entrance and path

Fig. 31 illustrates the possibility of uniting the drives of two adjoining properties, thus saving space and construction cost. A complete turn-around at the garage should be at least seventy-five feet in diameter. On many small properties which will not permit of a turn-around, a backing space is provided as shown in Figs. 19, 20 and 25. Such spaces are too often cramped, and as a consequence the lawn is cut and marred by wheels running off the drive. If the garage sets quite close to the street it is best to simply back the car out.

DRIVE TURNS

A turn in the drive is really necessary only on large places and, as it takes up a wide space, it is generally

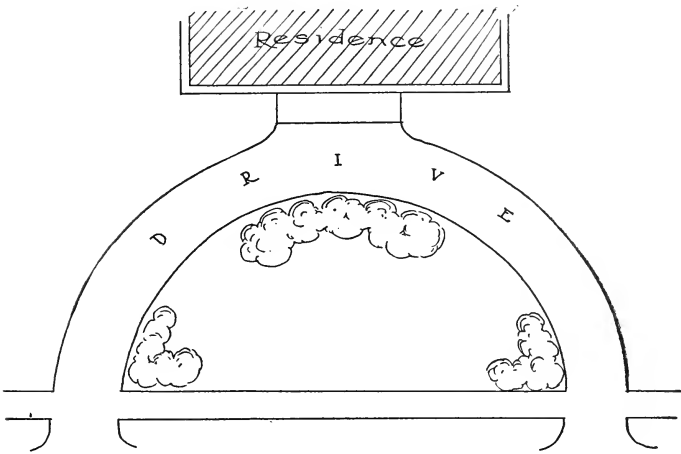


Fig. 26—An attractive driveway arrangement where a house is centrally located on a large city or suburban lot

located in the rear of the house, unless formally treated as the front or main driveway. For an easy turn with a large car or truck, a diameter of at least seventy feet is necessary, measuring from center to center of the drive. In most instances the drive should be straight at that section which runs by the side or front of the house. This suggests that a turn of roughly elliptical shape is more practical than a perfect circle. Where there are two entrances the whole main drive can be made a half circle, or a section of a circle (Figs. 26 and 27). Sometimes space can be saved by making a party drive and turn; this plan is especially useful where space is limited (Fig. 31).

KINDS OF WALKS AND DRIVES

CEMENT (Fig. 32A). While rather severe in outline and cold in appearance, cement is perhaps the most practical material for the

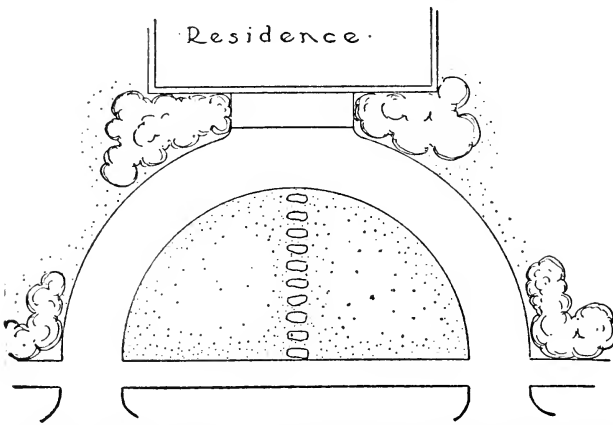


Fig. 27—Where a straight path must cross the grass area enclosed by a semi-circular driveway entrance, a narrow stepping-stone walk is more pleasing and less conspicuous than a more formal pathway

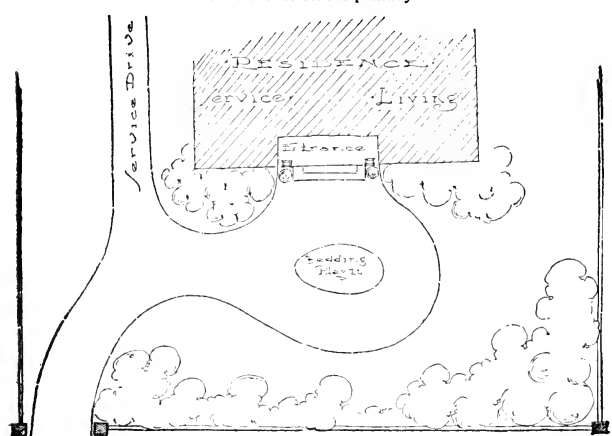


Fig. 28—When the service drive cannot be entirely separated from the main entrance driveway, it should be laid out as a smaller, subordinate, inconspicuous branch of it

construction of walks and drives, providing they are not extensive. There is now obtainable a stain that can be used to soften the glare.

CRUSHED STONE (Fig. 32B). Where there is a considerable length of driveway, this is most serviceable and fairly easy of upkeep. The macadam road is durable and good in color, blending in with the landscape. It is best to secure the bluish material that is rather sharp. Walks made in this way are adaptable to either formal or informal designs.

GRAVEL (Fig. 32C) is a good material to use. In the confines of the garden proper gravel is, perhaps, used more successfully than any other material. It is not, however, recommended for heavily used driveways, or on inclines.

CINDERS. The cinder or ash path is more or less common and provides a fairly good surface if well tamped down. It is not a good material for a much used road except when used as a sub-grade for stone or gravel.

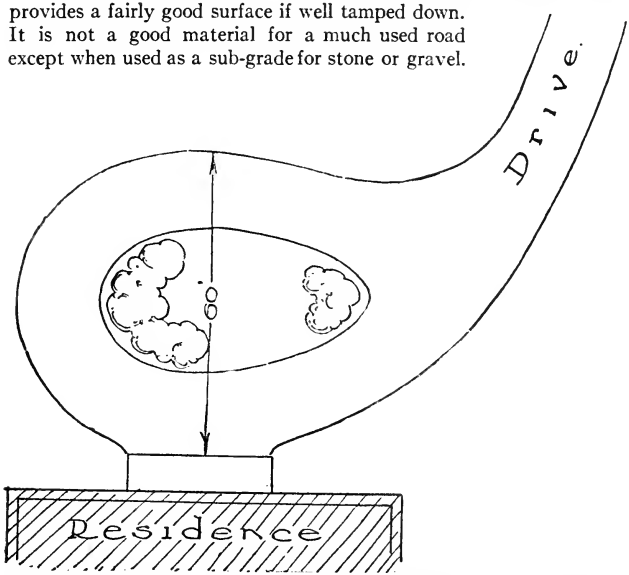


Fig. 29.—Where the lot is limited in size, or where large trees interfere, the turn-around can be made oval in form. However, 60 feet is the minimum diameter of such a turn; in fact, most automobiles require 75 feet in which to turn

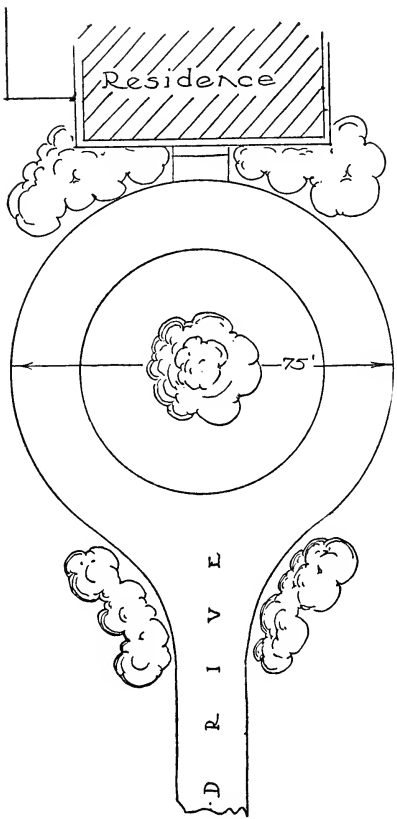


Fig. 30.—The turn-around in the drive should be placed on an axis (the main one preferably) of the house, as shown here. A hedge bordering a drive should be at least 18 inches back from it, and larger shrubs should stand 3 feet or more from it

STEPPING-STONES (Fig. 34) make a particularly good garden walk, as they are quite in harmony with the spirit of the garden. Laid regularly they can be used effectively in the formal garden, but they are at their best used as the informal walk. Flat stones are set flush with the lawn surface so that the mower will pass over them without the blades touching. The stones (or even pieces of thick slate) should be set twenty inches apart from center to center; a good size to use is roughly fifteen inches wide, twenty-four inches long, and one and one-half to three inches thick. When broken flagstone is used the pieces should be fitted together irregularly, varying the size and shape of the stones as they are laid.

BRICK (Fig. 32D). For straight walks in the garden, brickwork can be made very attractive; and by using the same kind of brick as is used in the house,

one can produce a very unifying effect. There are various patterns that can be followed in laying the brick and that are adapted to various widths and locations. (Figs. 36, 37, and 38.)

FLAGSTONE. While not very commonly seen, the flagstone walk is possibly the most durable of all kinds. The stones may be either cemented together (Figs. 33 and 35) or just laid in the turf like stepping-stones (Fig. 34).

FIELDSTONE OR COBBLESTONES can also be used as a walk either sunk in the turf or laid in mortar; but this is not as a rule a comfortable walk unless unusual care has been taken in its construction. (Fig. 35.)

CONSTRUCTION OF WALKS

The first essential in a garden path or walk is that it be firm and durable. Main walks should not be less than four feet wide.

CEMENT WALKS. Fig. 32A shows a cross section of a cement walk which is practical and durable. If built on a gravel or sandy soil it probably will not need a foundation of cinders as illustrated, but on heavy soils this is quite necessary. Three to four inches of concrete is laid on the cinders and a one-inch finish coat of cement. Expansion

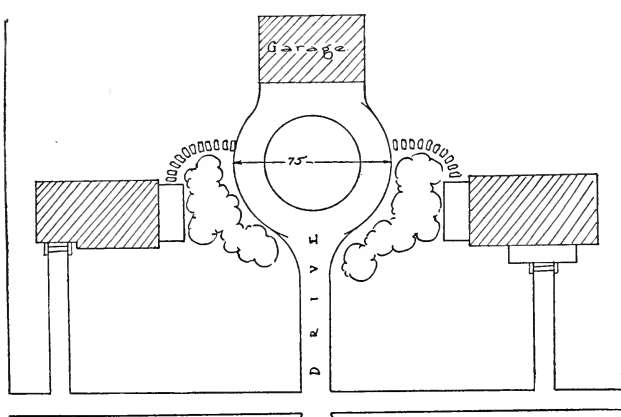


Fig. 31.—Neighbors on adjoining properties can often save space and expense and secure greater convenience than either could enjoy alone by cooperating on a party drive, turnaround and, perhaps, a garage

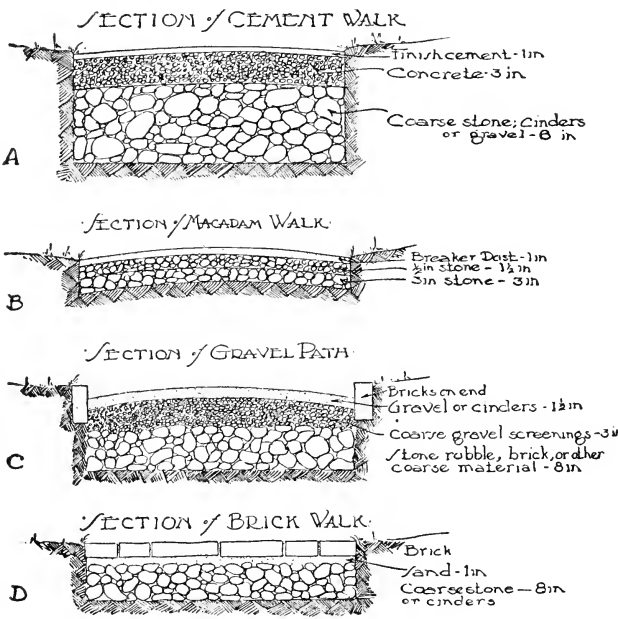


Fig. 32.—Showing (in cross section) the construction of four popular kinds of paths and walks. Note that in every case coarse stones or cinders are used as a foundation to insure good drainage and to prevent the disturbance of the surface by the "heaving" of loam or clay soils that often occurs in Winter

joints should be provided at short intervals to prevent injury from frost. These joints are usually filled with asphalt or sand. For the walk in the garden, cement is hardly recommended as it is too glaring and hard looking. For such a place the informal stepping-stone or brick walk is more desirable. If cement is used it should have a little stain added to the finish coat.

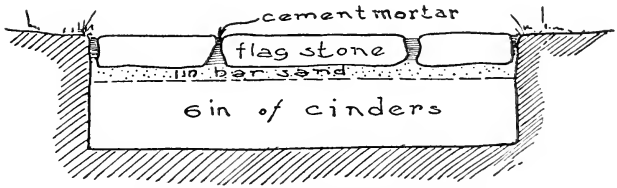


Fig. 33.—Showing the method of constructing a flagstone walk in which the stones are held in place by mortar

STEPPING-STONE WALKS. Such walks may be made from flat surfaced field or stratified stone laid as shown in Fig. 34. The top of the stone should be level with the surrounding turf. For this purpose stone about eighteen inches by twelve inches may be used. Such walks are best employed where a short, informal path is needed.

GRAVEL AND MACADAM WALKS. Fig. 32 B and C illustrate the construction of these styles.

BRICK WALKS. Fig. 32D shows the construction of the brick walk. Such walks when well designed and constructed are very pleasing. With the house of either the English, Colonial or Dutch style of architecture the brick entrance walk can be used effectively. Where curved walks are needed cement is perhaps better than brick, as it is easier to handle under such conditions. Small brick walks may be laid on six inches of clean cinders and an inch of bar sand for a cushion. Larger walks are best laid on four to five inches of concrete with a one-inch sand cushion. Brick laid on edge or half bricks on

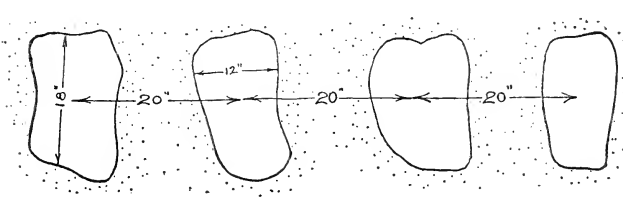


Fig. 34.—Plan of part of a stepping-stone walk to show the approximate distance at which the stones should be set. Their surface should be flush with the surrounding turf so the lawn mower can pass over them easily

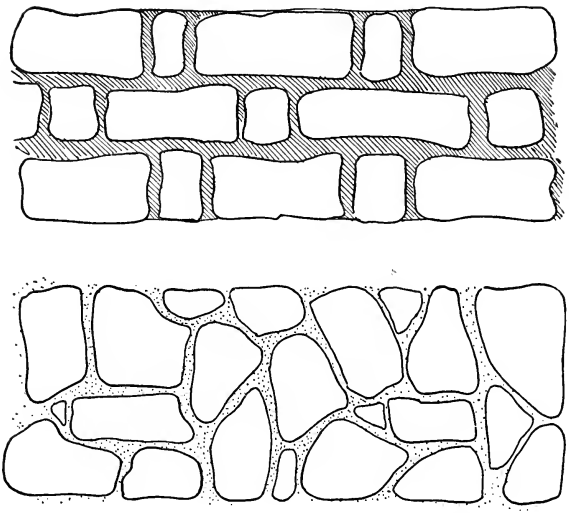


Fig. 35.—Two kinds of stone walk viewed from above. The upper is of flagstones set in mortar; the lower is of field or cobblestones set flush with the turf of the lawn

end usually constitute the curb. A few designs for brick walks are shown in Figs. 36, 37 and 38. Brick walks should be pointed with cement mortar or filled with sand. Various types of brick may be used for the walk, from tapestry brick to the common bench brick, but where the walk is a conspicuous part of the garden design it is best to use a good grade of dark colored red brick, and from time to time go over the surface with boiled linseed oil which will improve the texture and appearance.

CONSTRUCTION OF DRIVES

WATERBOUND MACADAM (Fig. 39). For the average driveway on the small or large place not constantly subjected to heavy traffic, a Telford road is perhaps more economical than, and just as serviceable as any other. The foundation for such a drive is made of good sized stone (quarry stone is best) laid at the bottom with the long dimension

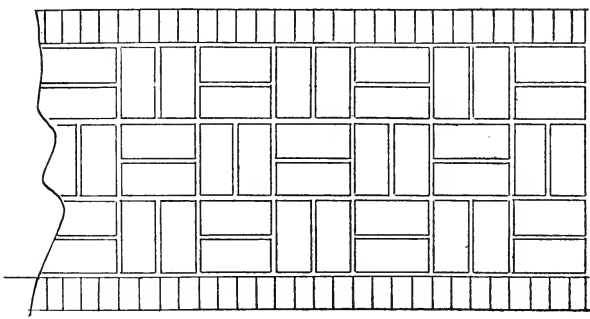


Fig. 36.—An attractive pattern for a brick walk best used for paths under six feet in width

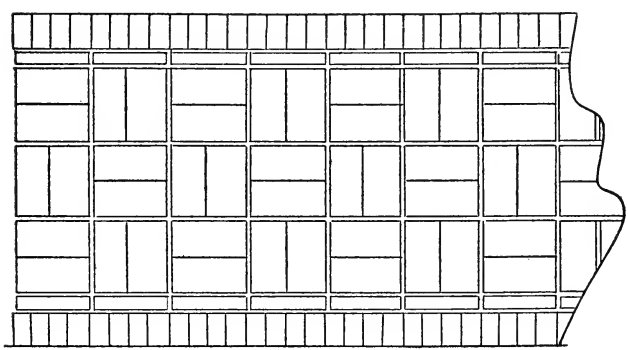


Fig. 37.—The "basket pattern" for a brick walk in which half-bricks placed on edge form part of the border. This design is suitable for wide paths

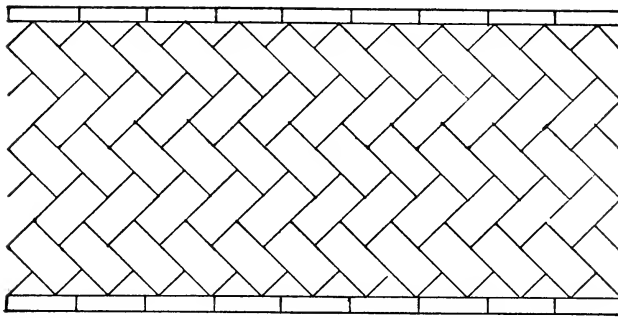


Fig. 38.—The "herring-bone pattern" is an attractive type for brick walks and is especially popular in old-fashioned gardens

of the stones at right angles to the side line of the drive. Fragments should be used to fill in crevices between the large stones, for if these crevices are not well filled the finer stone above will gradually work down and in time cause depressions in the surface of the drive. Over the large stone should be placed (and well packed) two to three inches of crushed stone with a maximum dimension of about two inches. The top layer consists of three-fourths inch stone and should be thick enough to cover well and form a binder for the layer beneath. Each layer of stone must be well tamped or rolled. The last layer, which serves as a surface binder, consists of about a half inch of breaker dust. This should be wetted down as it is being packed. Such drives should have an edging to keep all stone within the bounds of the drive. Brick on edge makes a neat edging and one easily constructed.

CONCRETE ROADS. On a small property it is sometimes best to use the cement ribbon drive which is economical and apparently leaves more grass area. If the ribbon drive is not used a solid cement drive may be constructed.

The width of the cement drive and the diameter of the turn-around are the same as for those of brick, namely, ten feet as a minimum width for drive, and 65 feet as a minimum diameter for turn-arounds. The necessity of laying the finishing surface of a cement walk or drive before the under surface is entirely hard should be kept in mind, for if the under surface sets before the top is laid the surface will no doubt peel off.

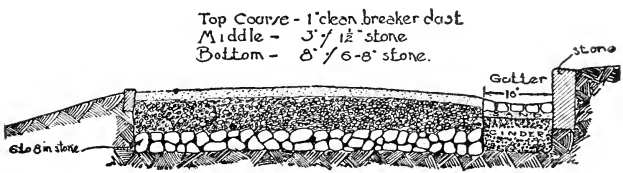


Fig. 39.—Cross section of a waterbound macadam driveway to show its construction. Note the rubble stone gutter and the cut stone curb used in this particular drive

DRAINAGE. If a road is quite long and built on a grade it should be provided with a gutter as shown in Fig. 40. If such a road has a crushed stone or gravel surface it should have considerable camber to throw off the rainwater before it can wash away any surface material. A few catch basins (Figs. 41 and 42) will take care of most of the surface water. If a sod gutter is used where the soil is more or less impervious, a tile drain should be laid six inches below the bottom of the gutter.

RUBBLE STONE GUTTERS. On large areas where the drives are wide and long, a rubble gutter is much used. Fig. 39 shows details of the construction of such a gutter, the average width being about sixteen to eighteen inches. To prevent grass from growing up between the stones they should be pointed with cement mortar made of one part cement to three parts sand.

CATCH BASINS. Unless there is a considerable area to be drained, or unless the drains are not connected with a sewerage disposal system, a catch basin is not always necessary. If the catch basin is constructed of concrete the mixture should consist of one part cement, three parts

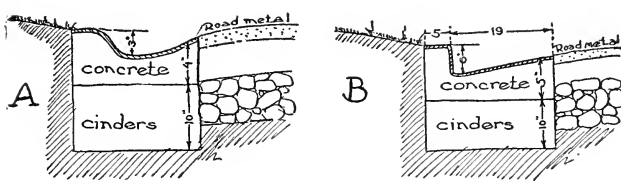


Fig. 40—Sections through two types of concrete gutter suitable for use in connection with ordinary driveways (A), or with especially wide ones, or roads in which a distinct curbing is necessary (B). The latter type is also preferable for roads or drives on a slope

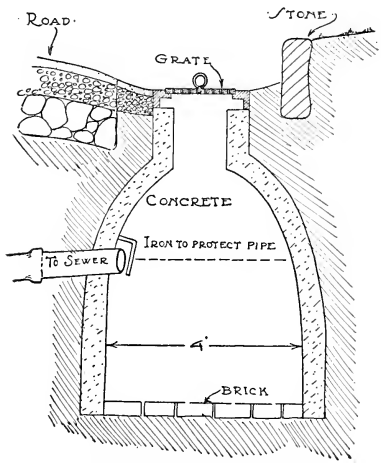


Fig. 41.—Cross section of an efficient concrete catch basin with removable grated cover to permit cleaning it out. Note the iron shield or fender to keep debris out of the drain leading to the sewer

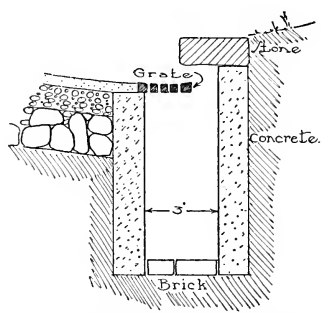


Fig. 42.—Section of a simpler type of catch basin suitable for wide drives and roads where there is less chance of extensive flooding and much debris

sand and three parts crushed stone or gravel. The overflow opening should be located twelve to eighteen inches above the bottom of the basin so as to provide below it a space in which debris may collect. This opening should be protected as shown in Fig. 41. If made of brick, the walls should be about eight inches thick and the brick should be laid in a strong cement mixture. The brick floor, however, should be laid dry to permit seepage. On steep grades catch basins should be installed at intervals of fifty feet, to prevent surface washing; on more gentle slopes 150 feet apart is sufficient.

Walls and Wall Building

WALLS may be divided into several classes according to materials used. As a rule they are made of brick, concrete, stone or wood. Brick walls are used extensively through the South as they are not affected by frost. Many retaining and fancy walls are made of brick. Concrete has come into vogue of late and is used considerably for rough walls and retaining walls. Stone is probably used for general wall building as much as any other material, as its utilization can be developed in many ways.

Terms Used in Wall Making

Walls proper are divided into two parts—a *subwall* and a *superwall*. If a wall has two faces the portion in the center is called the *filling*. *Stretchers* are the material of the principal surface of the wall laid lengthwise of the wall. A *header* is a piece that goes crosswise to reinforce the wall (Fig. 43). *Quoins* (Fig. 46) are pieces at the corner for binding. A *voussoir* is a keystone or wedgestone in the center of

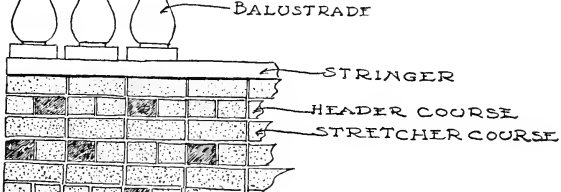


Fig. 43.—Front view of part of a brick retaining wall to illustrate the various parts

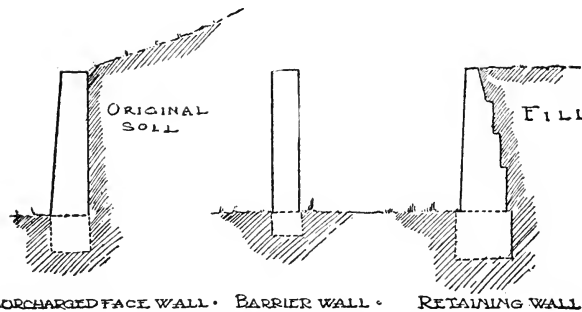


Fig. 44.—Three types of wall, the names suggesting their purposes

an arch. *Pointing* is laying the wall up dry first and then filling the spaces between the stones from the outside with mortar. A 1 to 2 mixture is usually used in pointing and the result is called a *flush joint. Back pointing* is keeping the mortar well back in the joints; this effect is also called a *raked joint.*

BRICK WORK

Brick for wall building is usually divided into two classes—sand brick and water struck brick. The latter results when the mold is wet and the material is pressed in and burned. The best grade is body brick; second grade brick is the common hard or bench brick, and brings about half the price of the body brick. Sand brick costs about the same as common hard. In measuring, five bricks are piled and measured. A carload numbers 10,000 to 15,000. Character may be given a brick wall by paneling and recessing.

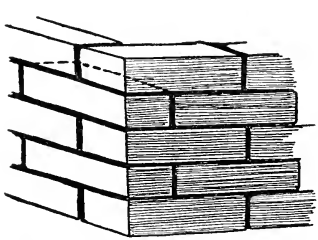


Fig. 45.—Diagram of a corner of a brick wall to show (in dotted lines) a quoin binder

Bonding. When all bricks run horizontally the result is called a stretcher bond. English bond is made of alternate rows of headers and stretchers. Fig. 43 shows a six-course English bond.

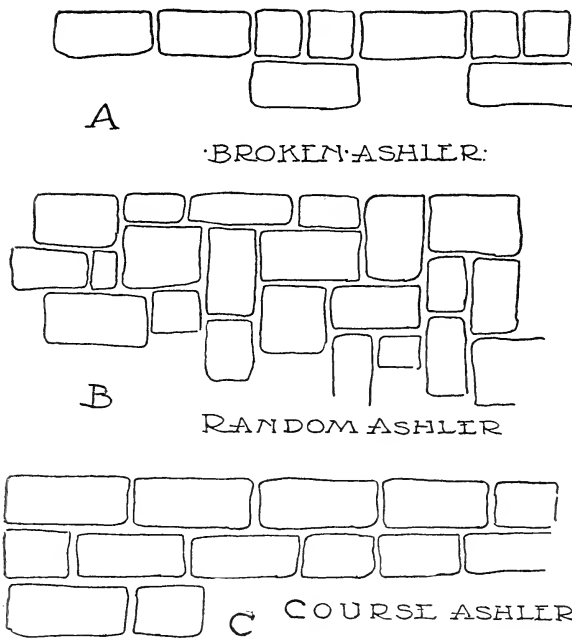


Fig. 46.—Three types of ashler wall construction

One square yard of standard brick on edge requires sixty-one brick. Brick work is estimated by the 1000 brick. An eight-inch wall requires fifteen standard brick to the square foot; a twelve-inch wall requires twenty-two and one-half standard brick to the square foot; a sixteen-inch wall requires thirty standard brick to the square foot. Six to six and one-half pressed brick are required per square foot of work. To lay 1000 common brick kilncourt requires two and one-half bushels or 200 pounds of lime, five-eighths yard of sand, and one barrel of cement. In figuring the number of brick for piers, take the height by the distance around in feet and consider the product as

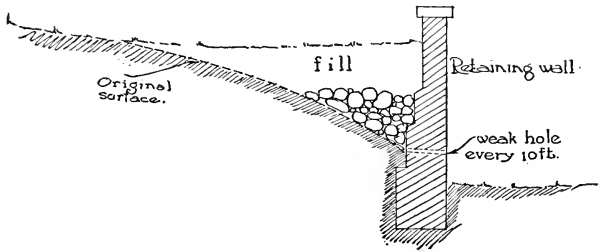


Fig. 47.—Section through a retaining wall and the soil it holds in place, to illustrate especially the "weak holes" provided at intervals to take care of the drainage

the superficial area of a wall whose thickness is equal to the width of the pier. All above figures include mortar. The average brick work requires about one-tenth yard of mortar per cubic yard of finished masonry.

STONE WALLS

Stone walls are usually divided into two classes—rubble and ashler walls.

A rubble wall is any wall made of stone in its natural state, laid as a random or course wall. Ashler walls are made of stone cut to rectangular lines.

A random ashler has no particular horizontal course, as shown in Fig. 46B. Broken ashler is shown in Fig. 46A and a course ashler in Fig. 46C. The best stone work has mortar one-eighth inch to one-quarter inch thick. When the face of the stone is left rough the wall is known as quarry-faced ashler; if the stone is dressed a little it is pitch-face ashler. In a field stone wall the stones should be of about the same size and all of about the same color. The weathered surface should show on the wall and the stone be laid with their long diameters horizontal. The largest stones should be used at the base of the wall. If the back of the wall is vertical the stone should be rough and headers that run through the wall should be used.

Foundations for stone walls are laid according to the same principles as govern those for brick or concrete walls. Ashler work requires one-tenth yard of mortar per cubic yard of finished masonry; rubble work requires three-tenths to four-tenths yards of mortar per cubic yard of finished masonry.

RETAINING WALLS

Oftentimes walls are difficult to design as it is sometimes hard to estimate the strength required. Walls need not be as large in landscape work as in engineering work. If a wall is to be used about a garden or near the house it should have a coping, made a little wider than the wall to keep out rain, etc. If balustrades are to be used, a stringer course (Fig. 43) is first placed on the wall, then by means of six-inch dowels the balustrade is held in place.

A wall should, if possible, be one solid whole and not be made up of parts. Retaining walls must have a good foundation, never less than three feet, and for strong walls four feet, deep. Never build a wall on filled ground unless it has had at least a year to settle and pack. It is best to go down to the original surface if possible. A foundation for a wall on a hillside should be built in steps (Fig. 49); and see that it is well drained. The width of walls should be one-third to one-half of the total height (Fig. 49). If made of cut stone masonry the width of the base is one-third of the height retained; one-fourth should be satisfactory for brick and ordinary masonry. The thickness should be greater in a surcharged wall (Fig. 44), say five-tenths to six-tenths of the height retained for stone masonry, and six-tenths to seven-tenths for concrete. A long, heavy retaining wall may have buttresses placed about fifteen feet apart to prevent its breaking. The work should be well bonded by the use of mixture of one part of cement to one and one-half of sand. Provide weak holes or openings through the bottom part of the wall for drainage. If plenty of stones are handy they may be used at the bottom of the fill to take care of the drainage. Weak holes are placed about twelve to fifteen feet apart (Fig. 47).

STEPS IN DESIGNING A RETAINING WALL (Fig. 49)

1. Decide on height to be retained. 2. Decide on batter to be used (not over one and a half inches to one foot). 3. Decide on

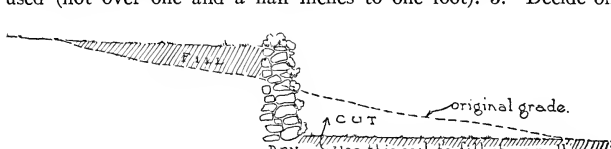


Fig. 48.—A dry wall can sometimes be used as a retaining wall where the cut is not too deep and the amount of soil to be held not too great. This sectional diagram suggests such a use

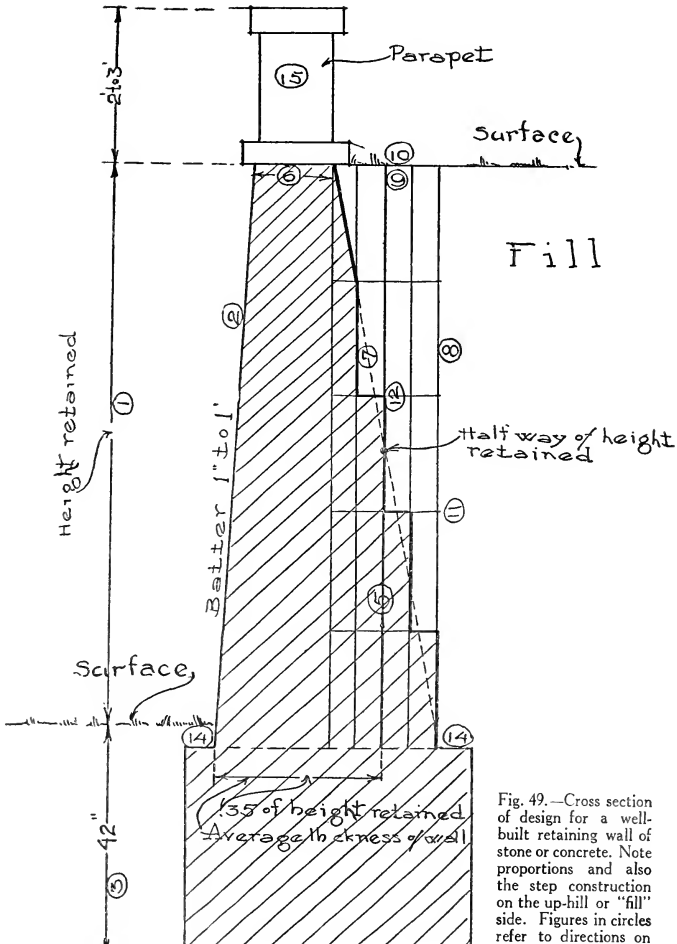


Fig. 49.—Cross section of design for a well-built retaining wall of stone or concrete. Note proportions and also the step construction on the up-hill or "fill" side. Figures in circles refer to directions on pages 45 and 47

depth of foundation. 4. Decide on proportion of width to height (three-tenths to five-tenths). 5. Establish a vertical line for the back of wall. 6. Decide on width of top of wall. 7. Draw a diagonal line from this point through half-way point in rear line. 8. Erect a perpendicular from lower end of diagonal line. 9. Extend top of wall horizontally to meet this perpendicular. 10. Divide this horizontal line into some even number of spaces (nine to twelve inches each). 11. Divide the perpendicular into the same number of parts *plus one*. 12. Adopt a regular step form for the rear of the wall using the vertical line passing through the one half-way point previously established. 13. The upper step goes in diagonally. 14. Extend the foundation six inches to nine inches beyond the wall at front and rear. 15. Design parapet.

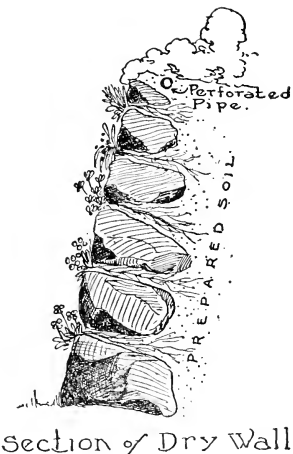


Fig. 50.—Sectional view of a dry wall showing location of perforated pipe to provide irrigation

DRY WALLS

For retaining purposes the dry wall is not very practical. In the first place it is not substantial enough to hold any appreciable amount of fill. It is, however, sometimes used as a facer wall where the material back of it is cut away and not filled in, in which case this type of wall in the garden is very desirable and can be made very interesting. For the location and construction of such a wall see Fig. 48.

It is often necessary to provide a subirrigation system for the rock wall when Alpine plants are used in the prepared pockets. This may be accomplished by running a two-inch agriculture tile along the top of the slope about a foot below the surface; for best results it should be embedded in crushed stone or cinders. Let the tile come up to the surface some place where it can conveniently be filled with water—

from a hose connection if possible. Another method that may be employed is that of running a perforated iron pipe along the top of the wall in practically the same way as the tile, except that it is best to connect it with a regular water supply and use a valve. For details as to the method of construction see under heading of Rock Gardens (page 104).

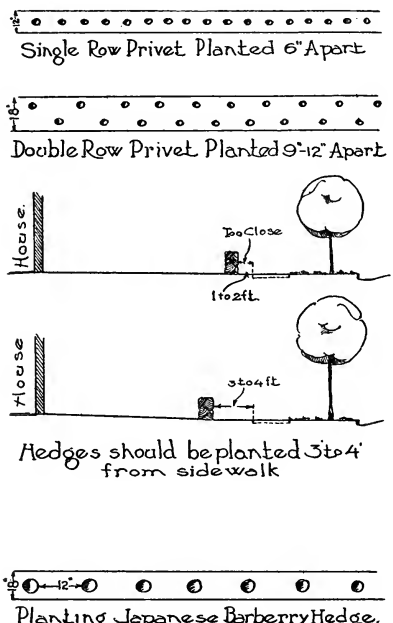


Fig. 51. Some planting distances for different kinds of hedges

PLANT MATERIALS AND THEIR USE

The Objects of Planting

THE main principles or objects of general planting can be enumerated as follows:

1. *To make a picture.* We can usually divide a picture into fore-, middle-, and backgrounds, one of which should contain the chief point of interest. Anything to be developed in detail should come in the foreground. The design is of interest either from the structural design or the applied design standpoint. Planting is placed as a framework for the picture. Buildings should be framed from at least one good viewpoint.

2. *To define areas.* By means of planting about the sides of the property.

3. *To make a background, if possible, for any object of interest.* This is especially true of fore- and middle-ground pictures. Small, simple, straight-lined buildings need a background more than large, irregular-shaped buildings.

4. *To effect a tracery (a partial screen) of foliage in front of the object of interest.* It serves to break up harsh lines

5. *To screen.* May be dense to exclude an objectionable object. Plants and vines are used for covering over uninteresting objects, as poles, fences, etc.

6. *To provide shade.*

7. *To divide the grounds into various areas,* such as service, private, public, etc.

8. *To bring out an accent in the picture.* Lombardy Poplars are often used for this.

9. *To give strength and character to the picture.*

10. *To give balance to the picture* and keep it in equilibrium by means of masses. Masses do not need to be of the same size. Many of Corot's pictures may be studied as good examples.

11. *To apply a practical reason for departing from a logical plan.*

12. *To unite harsh lines*—as by means of plants about the base of the house, etc. This makes a gradual transition from ground level to vertical walls.

13. *As a barrier*—use hedges.

14 *As a protection*—use windbreaks.

15. *To prevent washing or erosion on steep bank.*

16. *To cover bare earth.*

17. *As a simple, applied ornament*—in the case of bedding plants, specimen plants, etc.

Distances for Planting

ORNAMENTAL MATERIALS

Trees on wide streets, 40 feet to 50 feet apart.

Trees on average streets, 30 feet to 40 feet apart.

Large shrubs (Lilac, White Fringe, etc.), 4 feet to 6 feet apart.

Medium shrubs (Bridal Wreath, Deutzias), 3 feet to 4 feet apart.

Small shrubs (St. John's Wort, Dwarf Deutzias), 1½ feet to 2 feet apart.

Vines on wall or fence (Boston Ivy), 5 feet to 8 feet apart.

Vines trailing on ground (Honeysuckle), 2 feet to 4 feet apart.

Ground covers (Japanese Spurge), 6 inches to 12 inches apart.

Large herbaceous plants (Michælmas Daisy), 18 inches to 24 inches apart.

Medium herbaceous plants (Columbine, Iris), 12 inches to 15 inches apart.

Small herbaceous plants (Candytuft, Garden Pink), 6 inches to 9 inches apart.

Hybrid Perpetual (June) Roses, 2 feet to 2½ feet apart.

Hybrid Tea and Tea (Monthly) Roses, 1½ feet to 2 feet apart.

FRUIT TREES AND BUSHES

Standard Apples, 35 feet apart each way.

Standard Pears and strong-growing Cherries, 25 feet apart each way.

Duke and Morello Cherries, 20 feet apart each way.

Standard Plums, Peaches, Apricots, Nectarines, 16 to 18 feet apart each way.

Dwarf Apples, Dwarf Pears and Quinces, 10 to 12 feet apart each way.

Grapes, rows 10 to 12 feet apart; plants 10 feet apart in rows.
Currants and Gooseberries, 4 feet apart.
Raspberries and Blackberries, 2 to 3 feet by 5 to 7 feet apart.
Strawberries (for field culture), 1 by 3 feet to 3½ feet apart.
Strawberries (for garden culture), 1 to 2 feet apart.

NUMBER OF TREES OR PLANTS THAT CAN BE PLANTED ON AN ACRE

35 feet apart each way	35
25 feet apart each way	70
20 feet apart each way	110
18 feet apart each way	135
15 feet apart each way	205
12 feet apart each way	300
10 feet apart each way	435
8 feet apart each way	680
6 feet apart each way	1210
5 feet apart each way	1745
4 feet apart each way	2725
3 feet apart each way	4840

Rule for finding above data: Multiply the distance in feet between the rows by the distance the plants are apart in the rows. The product will be the number of square feet for each plant or hill. This, divided into the number of square feet in an acre (43,560), will give the number of plants or trees to the acre.

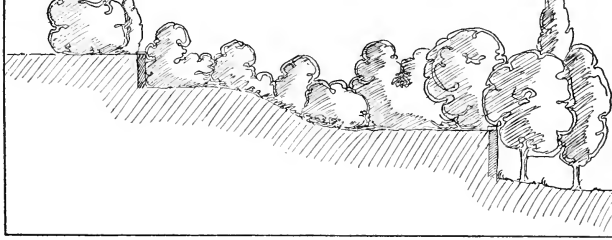


Fig. 52.—How a hillside can be planted to produce an illusion of grade

The Planting Plan

EVEN before the grading plan is drawn, the designer must have some idea of the whole planting scheme so he may, as suggested, indicate on a general plan the approximate size and shape of the respective planting areas showing their correlation in unifying the whole.

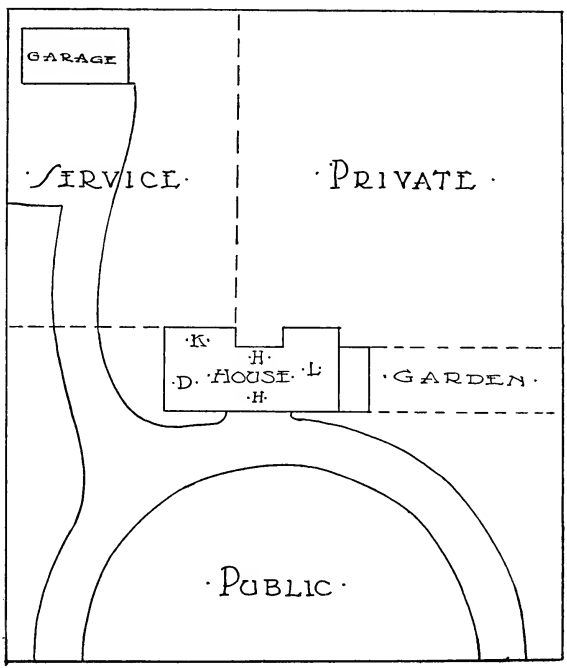


Fig. 53.—"The home grounds should be divided into three main portions," as illustrated here. The proportions of the different parts will vary according to the desires of those who occupy the property

The main purpose of the planting plan, however, is to portray as vividly as possible the preconceived idea. It should indicate not only the exact size of the planting areas, but also designate the number of plants to be used and their location, correct spacing and arrangement. Therefore, in order to execute a practical planting plan, the designer must know the principles of landscape design and have a thorough knowledge of the different plant materials to be used—their height and size at maturity, their season and period of flowering, their natural habitat, the kind of soil they prefer, the location they succeed in, their hardiness, their appearance and their general adaptability to the purpose for which used. It is to assist the planter and designer in this task that this book has been written; the various illustrations and sketches will serve to exemplify the procedure and the finished plan.

Where there is a flower garden it is best to show on the general planting plan merely the outlines, and have a larger scale drawing from which to work. In fact, all features requiring exact detail work in their execution should be rendered in this way.

Every planting, from that of the small city lot to that of an extensive acreage should be first studied and worked out on paper. It is easier to erase than transplant.

THE MAIN DIVISIONS OF THE GROUNDS

The grounds should be divided into three main portions (Fig. 53) as follows:

THE PUBLIC AREA consisting of front lawn, entrances and walks in one composition.

THE PRIVATE AREA consisting of private lawn, gardens and special features, and usually adjoining the living side of the house.

THE SERVICE AREA consisting of drying yard, vegetable garden, drives and turn-around, all confined if possible to the kitchen side of the house.

Sometimes another section—the *semi-public*—is included. This offers a glimpse of the private area and is treated so as to modulate the transition from the private to the public or service area.

The prevailing ideas in treating these areas should be, respectively, that *the public* section should suggest repose and inviting reception; the *private* section should give the impression of quiet privacy and lasting pleasure; and the *service* section should give the impression of

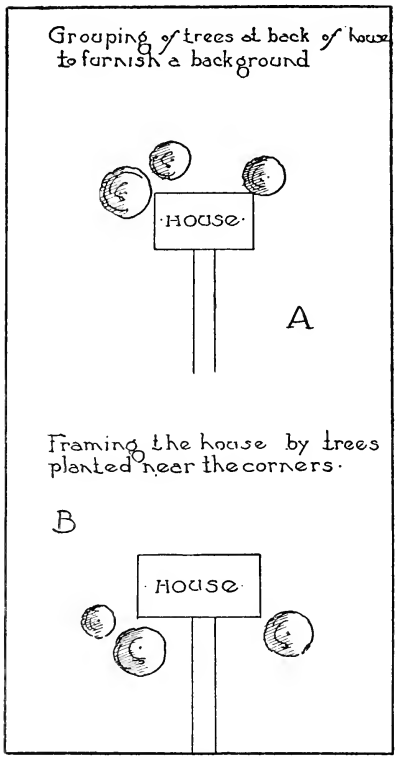


Fig. 54.—Two important uses of trees in connection with the dwelling

inconspicuous seclusion. The first consideration in designing the grounds is the selection of the style to be followed. This should be determined largely by the surroundings and the architecture of the house. In Gothic architecture vertical lines predominate, while the Grecian style is characterized by horizontal lines. Also we have the informal "English house" and the Colonial. The most pleasing com-

bination of buildings and planting materials is obtained by planting for contrast. Thus, conical or upright growing trees look well against the Grecian style of building, and for use with a Gothic style structure trees of a broad, round character and more or less flat growth are most effective.

Thought should also be given to the period of the particular architecture and the way in which the kind of plant material used harmonizes with that time. For instance, the Colonial house naturally suggests plants and flowers that were brought over by the early settlers, such as Boxwood, Elms, Phlox, Hollyhocks, etc.

THE USE OF TREES

The next step in developing the design is to place the trees which constitute its framework.

Trees are planted primarily either for shade, protection, as a background (Fig. 54A) or to "frame the picture" (Fig. 54B). In keeping with the general design, however, the specimen lawn trees should be planted at the salient or outstanding points in the borders, rather than in bays.

BACKGROUND—When planting for a background, tall growing trees that produce dark shadows should be selected and set in clumps rather close together, the distance back from the house depending upon

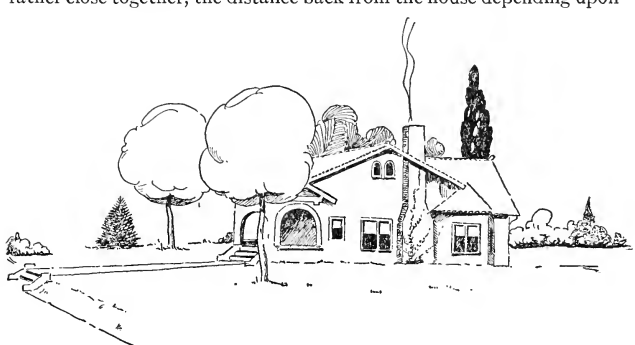


Fig. 55.—In planting trees on a lawn where ample room is provided, it is best to place them in such positions that they will frame the house as seen from some prominent point, such as the front entrance

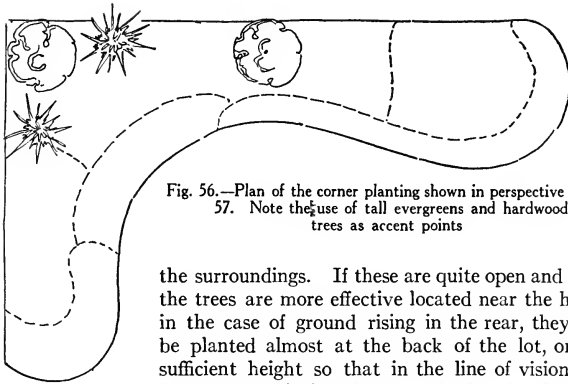


Fig. 56.—Plan of the corner planting shown in perspective in Fig. 57. Note the use of tall evergreens and hardwood trees as accent points

the surroundings. If these are quite open and level, the trees are more effective located near the house; in the case of ground rising in the rear, they may be planted almost at the back of the lot, or at a sufficient height so that in the line of vision roof lines are effectively softened or broken by the mass of foliage and branches.

SHADE—In planting for shade, the location of the trees will depend upon the section of the country. In the northeastern states, the heat of the sun is greatest when it is in the southwest, so the trees should be planted on the southwest side of the house.

FRAMING OR FOREGROUND USE—When planting trees about the house, it is advisable to so place them that the house is "framed" by them when seen from the most prominent viewpoint—generally the front axis (Fig. 55). To produce this effect the trees should be planted at each end of the house, in the foreground, so that the house "looks out" from between, giving the impression that it, rather than the trees has been placed. On a small property one tree on each side will give this effect, but a more natural setting is produced by grouping several trees (Figs. 54 and 65). This same idea can be carried out in developing a vista by placing the trees so as to "frame" the view.

PROTECTION, WINDBREAKS—On larger places, especially if exposed, a belt of trees planted on the windward side will materially increase the comfort of the place as well as permit a wider scope of selection in plant material. When planning such a windbreak, care should be taken not to break or interrupt good views with tall growing trees. On the other hand, a poor view can be "planted out" or hidden, and even an indifferent picture can be greatly improved by the thoughtful placing of trees.

EFFECTIVE SHRUBBERY PLANTING

Undoubtedly the most important point to remember when planning the shrubbery areas, is to keep an open lawn. This means placing a positive taboo on variously-shaped beds dotted here and there or in the center, except in carrying out the formal or the architectural style.

The corners of the property demand greater height than is required along the lines; therefore ample depth must be allowed for planting tall growing shrubs at the back and the dwarfer kinds in front. This obviates an abrupt transition from foliage to ground line (Figs. 56 and 57).

The corner plantings may be extended along the sides, so as to make a continuous "border planting," which creates a sense of privacy and seclusion. These borders, in the formal design, should not be straight, but so arranged as to form a series of small bays and promontories. Not only is this result more natural and artistic, but by it the extent of the lawn is apparently increased. Furthermore, in order to avoid a monotonous sky line a few small trees should be planted here and there along the border (Fig. 58).

At the point where the private area is begun, the border can be made to jut out considerably onto the lawn, to form a division between the public and private areas. The service portion of the grounds (near the kitchen) can also be effectively separated from the private area in the same manner. See Frontispiece and Fig. 20.

Fig. 57.—An attractively planted corner in which tall-, medium-, and low-growing materials are correctly used to produce harmony and variety without abrupt transition. See Fig. 56 for the plan of this arrangement

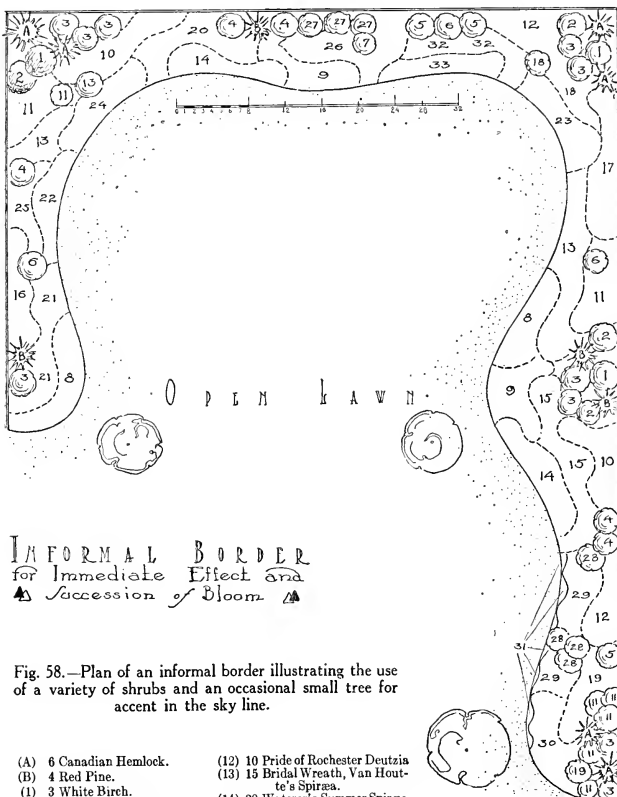


Fig. 58.—Plan of an informal border illustrating the use of a variety of shrubs and an occasional small tree for accent in the sky line.

(A) 6 Canadian Hemlock.
(B) 4 Red Pine.
(1) 3 White Birch.
(2) 5 Flowering Dogwood.
(3) 10 Canadian Redbud.
(4) 5 English Hawthorn.
(5) 3 Sorrel Tree (Oxydendron).
(6) 3 White Fringe.
(7) 1 Mountain Ash.
(8) 20 Dwarf graceful Deutzia.
(9) 12 Hydrangea, "Hills of Snow."
(10) 15 Large-flowered Mock-orange.
(11) 15 Rose of Sharon (3 vars.)
(12) 10 Pride of Rochester Deutzia
(13) 15 Bridal Wreath, Van Houtte's Spiræa.
(14) 20 Waterer's Summer Spiræa
(15) 10 Japanese Snowball.
(16) 5 Cornelian Cherry.
(17) 10 Golden Bells.
(18) 5 African Tamarix.
(19) 5 Siebold's Viburnum.
(20) 10 Desbois's Weigela.
(21) 10 Eva Rathke Weigela.
(22) 10 Sweet Pepper Bush.
(23) 10 Butterfly Bush or Summer Lilac.
(24) 10 Yellow Globe Flower (Kerria).
(25) 5 Lindley's Plume Spiræa.
(26) 10 Japanese Storax.
(27) 3 Smoke Tree or Purple Fringe.
(28) 4 Lilac La Tour D'Avergne.
(29) 7 Purple Beauty Fruit.
(30) 7 Single Hydrangea.
(31) 15 Blue Spiræa.
(32) 6 Dwarf Bush Buckeye.
(33) 10 Bushy St. John's Wort.

If a flower garden is desired, it should be enclosed as a separate unit, either by a hedge or shrubbery. Where space does not permit a flower garden, the shrubbery borders might be brightened by planting old-fashioned flowers in masses here and there along them toward the front. To add interest to a lawn, a birdbath in a shady nook, or a sundial in the open might be included—but when a home (which includes the grounds) receives the interested touch of the owner, many ideas will occur that will make the whole design quite individual.

In some cases the property is so narrow that it is not feasible to devote space to shrubbery borders; in this case a fairly tall hedge along the line will give the desired privacy without loss of space. Such a property should, as a general rule, be treated in a more formal manner, that is, by using chiefly straight lines in both planting and walks, and following the architectural style throughout the planting schemes.

THE FOUNDATION PLANTING

By this term is meant the planting close to the house, the object of which, as the name suggests, is to conceal or soften the foundation.

This is the commonest phase of planting, and it is greatly overdone. Instances are common where the house is practically hidden behind a wall of shrubs or evergreens that have grown so large as to shut out light and air, and which instead of beautifying the property have really become a detriment.

A good rule to follow in foundation plantings is this: The lower the floor level, the less base planting is necessary. Only where the house is set on a fairly high foundation should the planting be continuous across the front, and even then no tall growing plants should be used under or near the windows. The most effective treatment is to extend and widen the planting at the corners, leaving only a thin line, if any, along the face of the building (Fig. 59).

Where the floor level is practically on the same line as the grade, all that is generally necessary is to accentuate the entrance by planting a specimen at each side, and to place a few at each corner to soften the sharp angle where walls and ground meet. Often some clinging vines will answer the purpose and, speaking of vines, the right kinds make excellent covers for the open porch. It is economical to use copper wire on which to train them.

Fig. 59.—A suggestion—both perspective drawing and plan—as to the arrangement of a foundation planting in front of a dwelling. Note that the plants are grouped so as not to shade or obstruct the windows, but so as to effectively soften the hard corner lines of the house For key see facing page

As has been gathered from the foregoing, the selection of plant material for base planting must be made with great discrimination. The wide choice of plant material that can be used for this purpose offers good opportunities for creating effects of character and individuality.

If the preference is for Winter or all-year effects, evergreens can be used. A planting of flowering shrubbery is particularly pleasing during the growing season, but has little to commend it during Winter. Therefore a combination of the two types with numerous variations can be used to secure almost any effect desired.

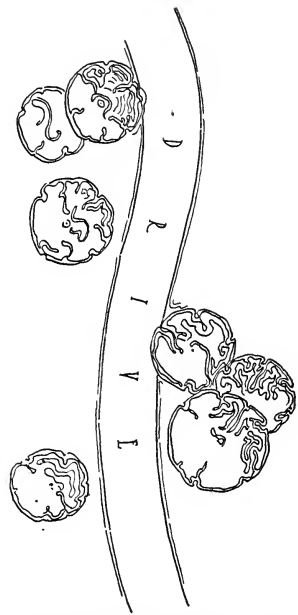


Fig. 60—Well planned grouping of trees or shrubs along a drive

GROUPINGS

Walks and drives are a practical necessity, but unfortunately they are sometimes so arranged as to interrupt an otherwise quiet view. To overcome this objection, trees or shrubs can be so disposed along the walk that it is more or less concealed and the view kept intact and, possibly, improved. It is not necessary to plant a continuous border along a lengthy walk or drive; in fact, this would tend to emphasize it rather than detract attention from it.

The planting along the path or drive should have an object, and if the specimens are grouped by the junctions and turns, they will give

Key to planting plan shown on opposite page.

(1) 2 specimen Vanhoutte's Bridal Wreath Spiræa.
(2) Dwarf Deutzia.
(3) 2 Bush Withe Rod.
(4) 2 Cork-bark Spindle Tree.
(5) 2 Double Pink Rose of Sharon.
(6) 6 Shrubby St. John's Wort.
(7) 2 Purple Lilac.
(8) 2 Hills-of-Snow Hydrangea.
(9) 2 American Arborvitæ.
(10) 2 Mountain Pine.

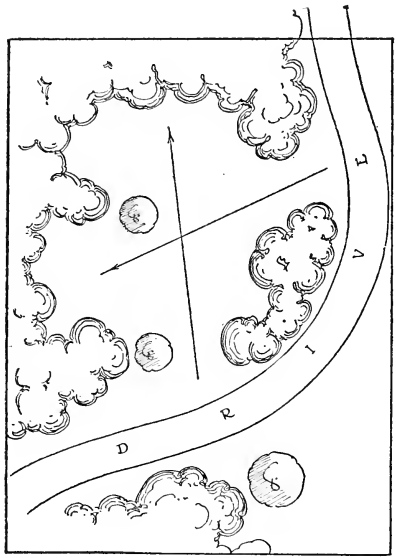


Fig. 61.—Another well planned driveway in which not only is the sweeping curve justified by the planting, but also gaps in the latter provide attractive vistas at several points

the impression that the walk has been arranged to fit the planting (Figs. 60, 61 and 62). On the other hand, a row of stately trees along a straight drive that is rather conspicuous, will add to its dignity. Such avenues, however, are found only on the larger places.

Often such shrubbery groups serve to enclose the formal garden, or the recreation area; but in all cases these outstanding groups must "fit in" with the general design and not appear detached. (See Fig. 63 for types of tree groups.)

The Principals of Planting

WHILE planting operations are simple, it is of the utmost importance that they be carried out promptly and properly.

All trees and shrubs, in fact, all vegetation, should be replanted as soon as possible after being dug. If the future location is not ready when the tree is received, the roots must be covered with soil and kept moist. The most convenient method of accomplishing this is to dig a trench a foot or more deep and lay the trees or plants in it at an angle of about forty-five degrees so the roots are in the trench; then cover all the roots leaving none exposed. (Fig. 66.) If a large number are thus to be "heeled in," a second trench can be dug parallel to the first, and the soil taken from it used to cover the roots of the plants lying in the first trench, and so on, thus saving time and labor.

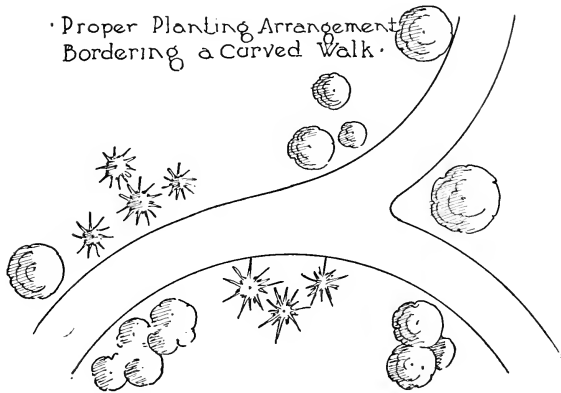


Fig. 62.—A good use of trees in conjunction with a branching walk. The rounded objects are hardwood trees or shrubs, and the pointed or star-shaped ones, evergreens

Even in such temporary planting the soil must be firmly tamped and soaked. It is, however, most advisable to have all in readiness for the tree or shrub that it may be planted immediately on arrival.

HOW TO PLANT A TREE

For any tree the hole should be about two feet (or more) deep and wide enough to allow the roots to be spread out to their full length with a foot to spare (Fig. 65). Furthermore, the hole should be made as large at the bottom as at the top, and not taper down as it so often does. In a heavy clay soil dig a little deeper than actually necessary and provide drainage by placing stones in the bottom. Over these (or on the bottom if no drainage is necessary) spread a layer of rough upturned sods which can be covered with a layer of rotted manure (Fig. 67). Then throw in sufficient good soil to bring the tree, when stood up, to about the same level as when it was previously growing. Set the tree in the hole and comb out all roots with the fingers, so that they lay in a natural, horizontal position, and none are bent under

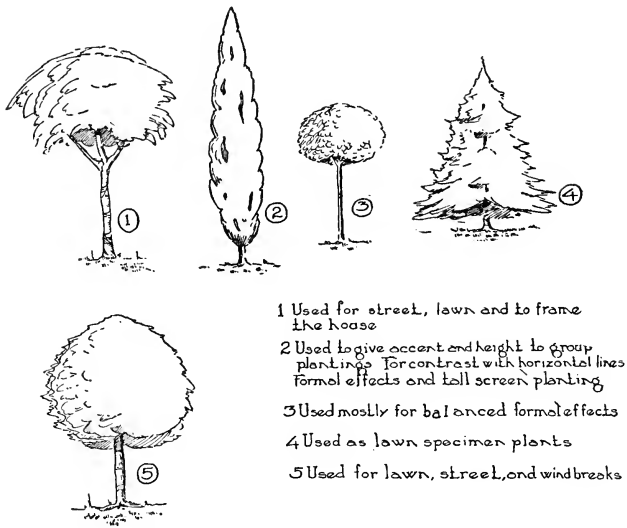


Fig. 63.—Types of trees and some of their important uses in planting the home grounds

or cramped. Then throw in the finest soil you have, preferably rather dry, working it among the roots so that every one comes in contact with soil and none are left "hung" in spaces. Tamp very firmly as the soil is thrown in and fill the hole to within about three inches of the surface. Fill the depression with water three or four times; this will settle the soil so the tree will be about two inches lower than it previously was, which will leave it about right. The following day the hole can be loosely filled in with good soil, leaving a slight depression around the tree trunk to catch the water (Figs. 65 and 67). Or, to facilitate watering, a basin can be built up around the tree and allowed to remain through the first Summer.

After the soil is given a final, thorough soaking, a three- or four-inch layer of manure will keep it moist as well as add nourishment. A tree having a stem over three inches in thickness should be guyed or staked to withstand strong winds (Fig. 68). Three stout wires from the tree

to pegs driven firmly into the ground at the three points of a triangle will serve the purpose. To prevent the wires from injuring the tree they should pass through pieces of rubber hose wherever they touch it.

PLANTING WITH DYNAMITE

When a large number of trees are to be planted, or when the subsoil is very hard, the holes are sometimes blasted with dynamite (Fig. 69). If this is done, care must be taken that the hole made (which is generally deeper than is necessary) is filled firmly up to the height at which the tree is to be planted. If this is not done the soil will settle much more than if the hole were dug by hand, and the tree will be left too deep and will not thrive.

TRANSPLANTING WILD TREES

Before moving a tree from the woods, it is advisable to root-prune it as directed under "Root-pruning" (page 70). This should be done in early Spring; then, after the trench is filled with good soil, the tree should be allowed to stand until the following Autumn or, better still, the next Spring. It can then be moved with less root injury. If it is taken out in Winter, it can be handled with a frozen ball of earth and

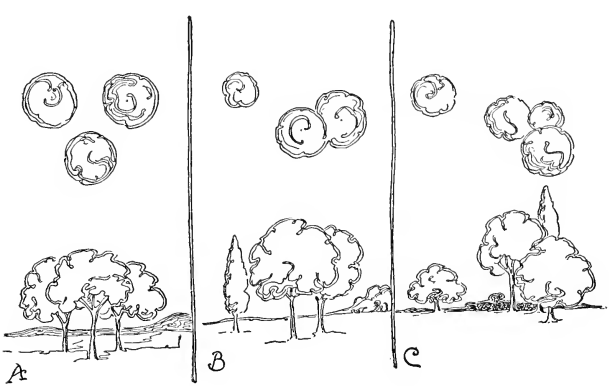


Fig. 64. Diagrammatic examples of tree grouping. (A) is decidedly poor, both because it uses three specimens of the same size, shape and type in a symmetrical group, and because this arrangement detracts from the real beauty of any one of them. (B) is better, and (C) better still, both of these having variety in height, mass, sky line and perspective

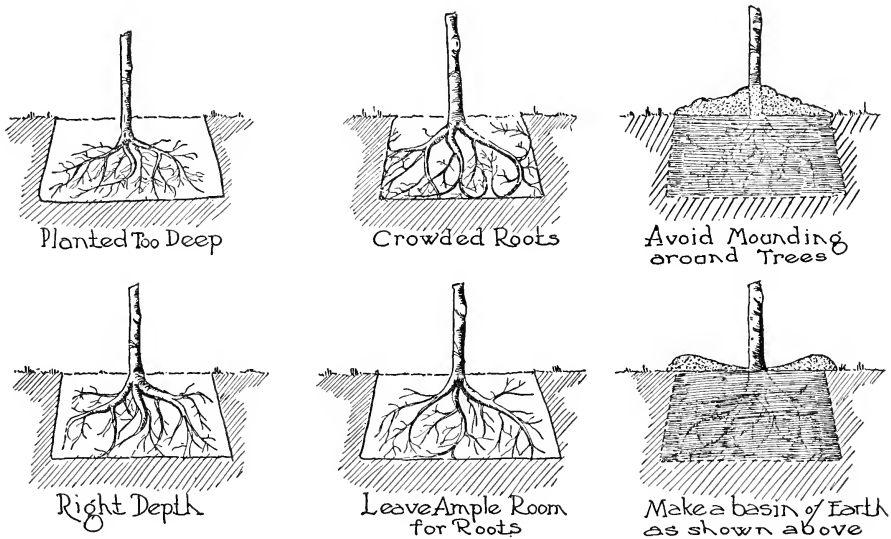


Fig. 65.—Right and wrong methods in digging a hole and setting a tree. Give the roots ample room and provide for them for a future supply of whatever moisture may become available

gradually lifted out of the hole as illustrated in Fig. 71. In any event the top must be cut back more severely than if it had been growing in a nursery, as a greater proportion of roots will have been lost.

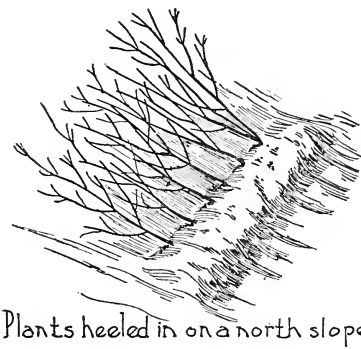


Fig. 66.—If conditions are not right for planting when the stock arrives, heel it in at once, as shown here

PLANTING SHRUBS

Shrubs should be given just as much care as trees, but, of course, the hole need not be so large.

Generally speaking, shrubs are planted in masses, therefore the whole planting areas or beds can and should be prepared previous to planting. Dig down fifteen to eighteen inches, and if the soil is poor, enrich it by mixing in good fertilizers such as well rotted manure, lime if needed, etc. However, if convenient, the poor soil should be entirely replaced with good topsoil, and this allowed to settle before the planting is done.

Should the plants arrive in a frozen condition, thaw them gradually in a cool, shaded place before planting. If you are not prepared to plant, heel in the shrubs as already described for trees. Each shrub should be covered separately—don't just heel in the bundles.

On banks it is best to plant the shrubs in separate holes, instead of digging up the entire bank, which would break up the sod, loosen the soil and cause washing.

Whatever pruning is necessary can be done much more easily before the tree is planted than when it is set up, so the head as well as the roots should be examined before planting, and any needed work done while it is lying on the ground.

PLANTING HERBACEOUS PERENNIALS

The most important thing to remember in planting perennials is to see that they are not too deep, nor, on the other hand, set on the

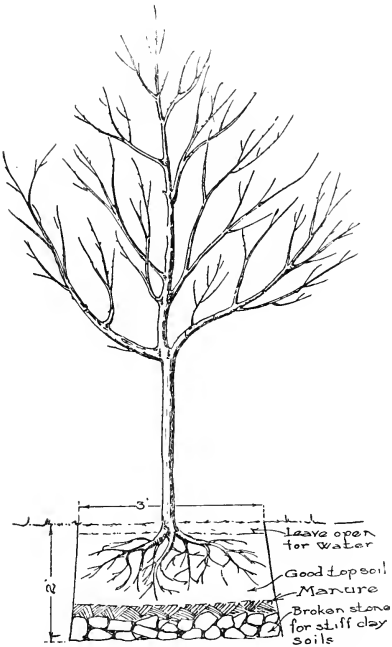


Fig. 67.—A correctly planted tree in the sort of environment in which it should thrive

top of the soil and too lightly covered. In the former case the "crown" or heart of the plants will rot; whereas, if the plant is not set deep enough, the roots will dry out.

The wide diversity in root forms of perennials makes it impossible to stipulate any specific depth for planting them, but it should be an easy matter to judge the proper depth to plant on seeing the subject.

All perennials that start into growth and, as a rule, flower in early Spring (such as the Peony), should be planted in the Fall; for those with a late blooming period and a distinct crown of leaves on a more or less fleshy root, such as Foxglove or Poppy, Spring planting is best. With a few such exceptions perennials can be planted either in Spring or in Fall after growth is finished. Fall-planted Peonies are sometimes "blinded" by a too heavy Winter covering—that is, they are prevented from blooming although they grow luxuriantly otherwise.

Pruning

THE reasons for pruning may be grouped under the following five headings:

1. To modify the vigor of the plant; 2. To produce better or more flowers or fruit; 3. To shape the plant to desired size or form; 4. To remove imperfect or superfluous wood or branches; 5. To facilitate cultivation.

We may outline the results of various kinds or degrees of pruning to show the principle followed in deciding upon a certain method: (1) Severe pruning of the top tends to increase the production of wood, and so rejuvenate weak or declining plants; (2) Severe pruning of the roots tends to lessen the production of wood and increases root fiber, and, indirectly, fruitfulness.

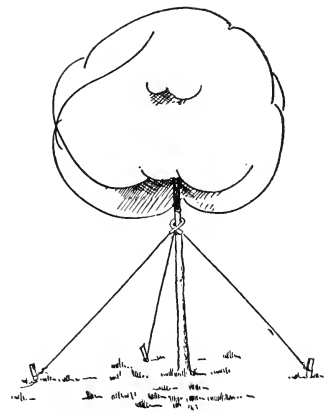


Fig. 68.—Trees three inches in caliper and over should be guyed with wires in three directions. The wires should pass through pieces of hose where they touch the tree

The natural tendency of plants is to grow from the uppermost buds. By heading in (cutting off the top) the lateral, dormant buds lower down are stimulated to develop.

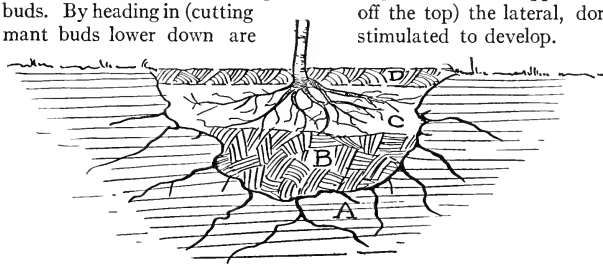


Fig. 69.—Dynamite can be used to simplify the digging of holes and to loosen a stiff subsoil and improve drainage conditions. In this sketch (A) is the cracked and loosened subsoil; (B) the broken subsoil dug out, enriched, if possible, with well rotted manure, and replaced; (C) the topsoil firmed in around the roots; and (D) either top or subsoil loosely filled in and kept loose

Fig. 70.—Showing the correct depth for planting an evergreen; the most important thing however, is to see that it stands at just about the same level it stood at before

Summer pinching of healthy growths increases fruitfulness (forms more fruit spurs) and causes the wood to ripen early, thus, in wet seasons especially, minimizing the danger of the wood being frozen because of its soft, sappy condition.

The season in which the pruning is done has considerable influence on flowering or fruiting qualities, because Winter pruning tends to produce wood and Summer pruning does not.

Local and climatic conditions should always be considered; they may necessitate variations in any rule.

There are two distinct phases of pruning, namely, root pruning and top pruning. While the majority of trees and shrubs secured from a nursery have already been root pruned, it will perhaps not be out of place to outline the method followed.

ROOT PRUNING

The object in pruning the roots of a newly dug tree is twofold: To produce more root fibers (feeding roots), and to expedite the healing of broken and damaged roots. The cut should be cleanly made with a sharp knife or shears, leaving a smooth surface. The cut is best made from the under side upward so that the open surface is facing down. Fruit trees, as a general rule, are root pruned more severely than ornamental or shade trees. This is because the quantity of fruit is increased by the production of more root fibers. To root prune an established tree, dig a trench around it two to four feet deep, according to the size of the tree, and at a distance from the stem of about half the spread of the branches. All the roots that are uncovered should be cleanly cut. Sometimes it will be found necessary to undermine the tree in order to sever the tap roots which go straight down. The trench should then be filled in with good soil and this firmly tamped.

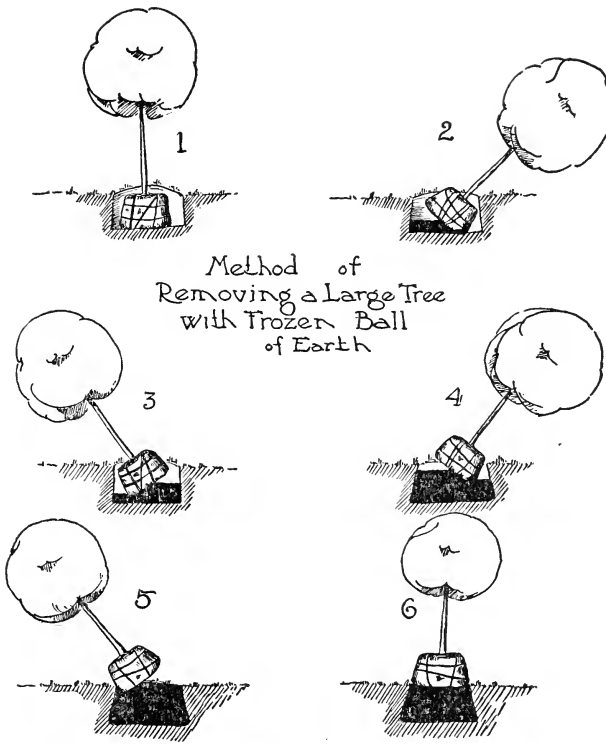


Fig. 71.—The moving of large trees in Winter with large balls of frozen earth is a relatively modern method and decidedly popular. This shows the successive steps in getting such a tree out of the ground after the ball has been burlapped to prevent injury to the root system

TOP PRUNING

Before removing or cutting any branch of any tree or shrub the object in view should be clearly understood. Fruit trees are pruned, generally speaking, to increase their fruitfulness; in ornamental shade trees shapeliness is desired; in shrubs the future outline and flowering qualities must be borne in mind. It is, therefore, absolutely necessary that the person pruning should know the habits of the plant, and not merely clip off the protruding branches to "shape" the bush, as is often done, with the result that all the flowering wood is either shortened or cut away entirely.

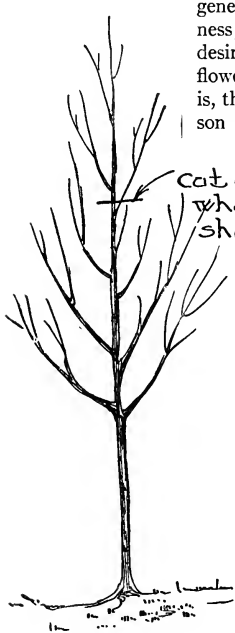


Fig. 72.—Top pruning or "heading back" to induce bushiness

It is impossible to dig any plant of any size without having it lose some portion of the root system, and generally, it is the feeding rootlets that are lost. Therefore, in order to equalize the consumption of food and the supply (or ability to secure it) which has been materially reduced by the loss of the roots, the top must be reduced by pruning the branches. It follows that the condition of the roots, to a great extent, decides how severely the branches must be cut back. It is safe, and indeed, advisable, to prune the top more severely than the roots when planting a newly dug tree.

As previously stated, a well-balanced, shapely top or head is desired in a shade tree, and the tree must be trained and pruned with that object in view. The main stem or "leader" must, therefore, be quite distinct from all side branches. In the event of there being two leaders, select the better and cut away the other as severely as the

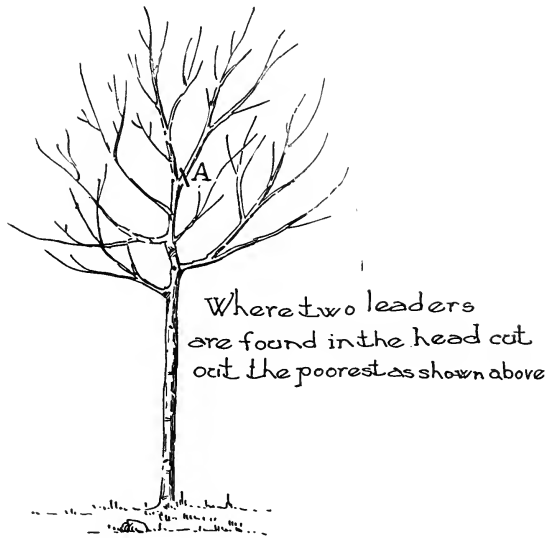


Fig. 73.—Top pruning to produce an upright, symmetrical leader or main trunk

shape of the tree will permit—even removing it altogether if possible. (Fig. 73). In many young trees the main stem shoots up very tall and develops few side branches. In such a case the leader should be shortened to induce a more bushy top, when a new leader will be formed (Fig. 72). If the tree is on or near the sidewalk, all low branches should be removed so as to leave at least seven or eight feet clearance for pedestrians. On a young tree these low branches may simply be shortened until the main stem is sufficiently strong and thick to permit them to be cut off closely. If, however, the tree is on the lawn, the lower branches may be allowed to remain, and only the weak or crossing branches need be removed, as well as those that project beyond the general outline of the tree. Sometimes trees become too dense or crowded and need to be thinned out. Before cutting it is advisable to mark those branches which can be removed without spoiling the shape or leaving a hole in the head. Thinning in this way, that is, by

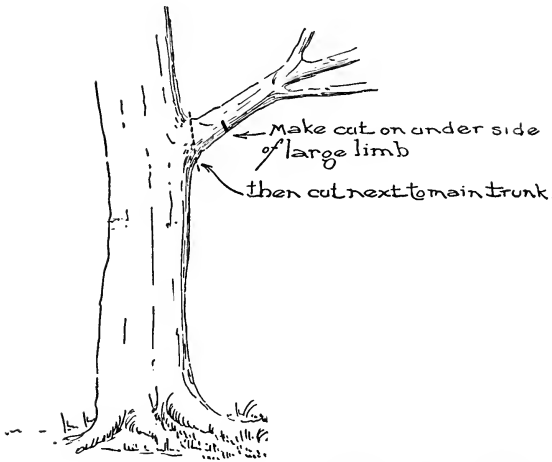


Fig. 74.—How to cut off a large limb to prevent its splitting off and making a long, jagged wound

removing whole branches, is highly preferable to simply clipping or shortening the ends, or cutting away the top.

When sawing off a large limb, first make a cut on the underside to eliminate the possibility of tearing the bark when the limb falls. Furthermore, the limb should first be cut off at some distance from the stem, and afterward quite close to it (Fig. 74). All newly cut surfaces should be painted thoroughly to keep out rain and the action of frost. Any good lead paint will serve, but liquid asphalt or tree varnish has been found most effective and durable.

PRUNING FLOWERING SHRUBS

Unless a formal shape (topiary work) is desired, shrubs should never be clipped with hedge shears, or cut in any way that will tend to form a flat top or sides. The majority of shrubs need but little annual pruning, and this must be done at the right time and in the right manner. It is often necessary, however, to rejuvenate shrubs, and this can be accomplished by cutting away, right to the ground, all the old branches and by shortening the weak wood (Fig. 75). This

will be effective in producing strong, young shoots that will bear flowers and more healthy foliage.

When shrubs are growing too vigorously and need to be reduced in size, the pruning should be done before the flower buds have formed. For instance, all Spring flowering shrubs (Golden Bell, Bridal Wreath, Japan Quince, etc.) should be pruned soon after they have finished flowering, by simply removing old wood to keep the bush open and to force the production of more flowering branches. Other shrubs, such as the Hydrangea, which bloom late in Summer or Autumn, should be cut back in early Spring, as they flower on the branches that are produced that year (Fig. 76). Still another group, typified by the Lilacs, need never be pruned beyond the point of the removal of dead and very old, scraggly branches; it is safest to do this just after the flowering period.

Fig. 75.—Where to prune flowering shrubs. The old wood (A) and the injured branches (B) need most and first attention. Then proceed to the necessary shaping of the vigorous growth. As a rule, prune just after the plant has bloomed

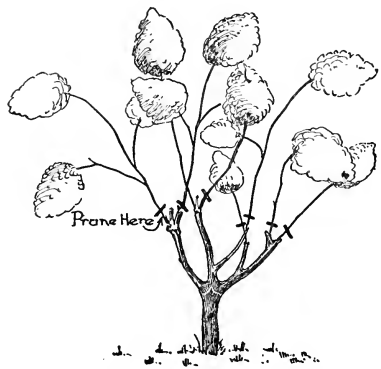


Fig. 76.—Generally speaking, the more vigorous the pruning the more abundant the resulting blooms. Cut back Fall-blooming sorts (Hydrangeas, for instance) in early Spring

PRUNING HEDGE PLANTS

The initial pruning of a newly planted hedge, such as Privet, should be done at the time of planting if in Spring. If, however, the planting is done in Autumn, it is better to merely shorten the growths so that they will not be swayed by the wind, and then prune severely in Spring. Strong growing plants similar to the Privets should be cut down to within three or four inches of the ground and then allowed to grow unmolested for a season. The following Spring, they should again be shortened—to about one foot this time, and of course, clipped to as narrow a width as desired. During the second season, the growths can be shortened three or four times, as in this way a hedge that is dense right down to the ground is formed (Fig. 77). If a taller hedge is desired, the height should be attained gradually rather than in one year. The base should in all cases be broader or at least as broad as the top, otherwise the hedge will become top-heavy and have a tendency to break down under the additional weight of snow, etc.

PRUNING EVERGREENS

When used in the composition of the general landscape picture, evergreens need practically no pruning, with the exception, of course, of the removal of dead and broken branches. There are, however, many instances when it is desired that the growth be checked so that the plant in question may be kept proportionate in size to its near companions, as in a foundation planting. Sometimes a specimen evergreen becomes thinly clothed and should be clipped or pruned to induce a more vigorous growth of lateral branches and twigs. The

symmetrical shape of the evergreen is also maintained by such pruning. This, which may be called the main or annual pruning, should be done just when growth commences in Spring. While the work is often done with hedge shears, it is best to shape the tree or bush in question with a knife. By pruning in this way and occasionally pinching the long growths, the tall growing kinds can be kept comparatively low; hence we sometimes see them used in base and low plantings. The well-known dwarf trees of Japan are stunted and contorted by persistent pinching, by tying the shoots, and by constricting the roots. By pruning off the leader of a young, thin evergreen, it can be made to widen out into a well-shaped bush, and another leader can be formed by selecting a well-placed, strong shoot and tying it to a stake.

PRUNING VINES

The general principles of pruning shrubs can be applied to woody vines—when they need pruning. This, however, is very seldom. Take out the old wood and endeavor to promote the growth of healthy young shoots upon which the fruits or flowers are produced.

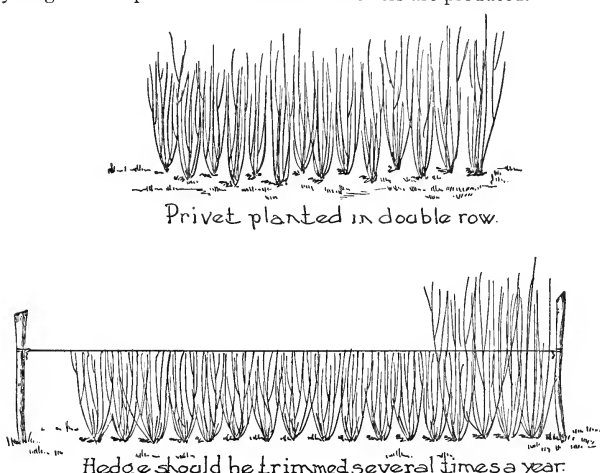


Fig. 77—To make a hedge dense right down to the ground, prune it frequently during its first few years of growth

Winter Protection

TREES and shrubs used to any great extent in landscape planting are hardy, and need little or no protection. Notwithstanding this, it is a good practice to spread a layer of manure over the bed after the soil is frozen, especially the first Winter after transplanting or until the planting is established. All tender and half-hardy shrubs can be effectively protected by burying them according to the method described for tree Roses (page 90). Small shrubs can be covered with baskets, barrels, and boxes as is suggested for Rose bushes.

Roses. The protection of Roses is taken up under "Rose Gardens" (page 90). Pine or evergreen branches can also be placed among the bushes.

Evergreens. The greatest danger that evergreens need protection from is the Winter and Spring sun. The low temperatures freeze the sap in the foliage; then when the sun strikes the leaves, the sap thaws out rapidly, breaking down the cell walls. The bad "scalding" that results turns them quite brown. The object, then, is to provide shade in the right place. This can be effected by sticking native Pine branches into the ground on the south and east sides of the evergreens.

Another method is to "box" the evergreens with cheesecloth, or to build a tent-like arrangement around them after covering the whole with straw. They can also be loosely wrapped in burlap, but this is not so good a method as it is liable to crowd the branches. A good mulch of manure on the soil will protect the surface roots. Dwarf plants can be simply covered with Pine boughs.

Bulbs. A good layer of manure is all that is necessary for ordinary Spring-flowering bulbs. The danger involved in wintering half hardy or tender bulbs is less that of their freezing than that of their decaying. The latter result is caused by standing water which can be prevented by mounding the soil above the bulbs so that the water is quickly shed.

Herbaceous perennials. No one general method can be applied to all perennials, but the majority can be covered merely with light, long manure or hay (preferably salt hay) which must not be applied until *after the ground is frozen.* If the manure is used, a good plan is to stick pegs into the border a foot or so apart, near the plants, to keep it from resting directly on them. In the Spring dig the finer parts of the manure under.

Some perennials have a fleshy root system (as Alkanite, Hollyhock, Foxglove, Poppy, etc.), and these are likely to decay as a result of standing in water. Therefore, as in the case of tender bulbs, mound the soil above them; then *after it has frozen*, the manure or hay can be spread.

Another class of plants which retain their leaves throughout Winter—both shrubs and perennials—should be well covered with dry leaves, which can be kept in place by boards laid right over them. So placed, the boards will prevent water from soaking directly through the leaves to the plants, and possibly heating and decaying them. No moist or fresh manure should come in direct contact with any perennials.

VINES can be covered with burlap as suggested for climbing Roses. If not hardy, take them down and bury them, mulching afterward. However, very few vines need much attention.

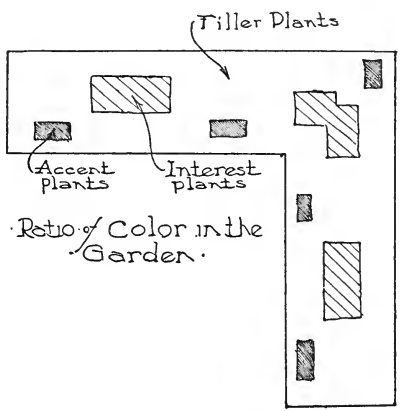


Fig. 78.—On the basis of color, plant materials should be used in a border in about these proportions: Filler material, 4 parts; interest material, 2 parts; accent material, 1 part. (See page 83)

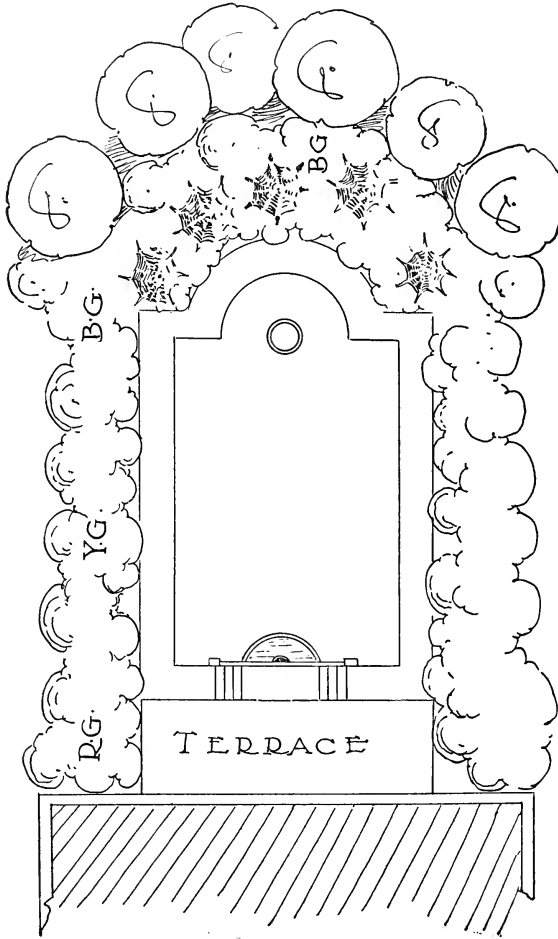


Fig. 79.—Correctly used, different shades of foliage color as viewed from a terrace can give the garden apparently increased dimensions. In this plan, RG is reddish-green; YG is yellow-green, and BG is bluish-green

GARDEN DESIGN AND GARDEN MAKING

COLOR IN THE GARDEN

COLOR is made up of three parts or elements: The *value* of a color is its degree of lightness or darkness; two colors may be blue, but one a light blue and the other a dark blue. *Hue* is the individual pigment that gives a color its name, such as red, blue, etc. *Intensity* is the brilliancy of a color, as a bright or shiny blue is distinguished from a dull blue. Brilliant colors when used in the garden give us accent; they are readily distinguished and seem set apart from other colors. Should one have a border planting of perennials composed of a number of brilliantly colored plants, it would be difficult to secure any accent, as all would clamor for attention.

Colors are divided into two main classes: the *primaries*—red, yellow and blue; and the *secondaries*—green, orange and purple. When one color is said to be a *complement* of another it means that the two have nothing in common, as in the case of orange and blue—there is no trace of one color found in the other. Such colors are also called *contrast colors*. Complementary colors mixed in equal quantities produce gray, or the neutral color, but they may be effectively used together in unequal quantities so as to allow one color to predominate, as by planting a few White Birches against a heavy background of evergreens.

Almost every color may be found in plant material in some form or other, but usually in leaf, blossom, fruit or stem. Plants vary in color value as the distance increases, for at a distance they appear to take on a bluish cast. This fact may be taken advantage of in creating apparently increased dimensions by the use of bluish foliage, such as that of the Bush Honeysuckles, Spiræa Vanhouttei, etc.

If a garden is usually seen from a certain definite viewpoint such as a window or terrace, it is well to arrange the colors so as to apparently increase the distance (Fig. 79).

Where no attempt has been made to choose harmonizing colors, there usually exists a series of color exclamations, each fighting for supremacy, whereas the body of the garden or the beds should consist of unifying shades with a few contrasting colors for accent; this will emphasize and enliven the whole effect.

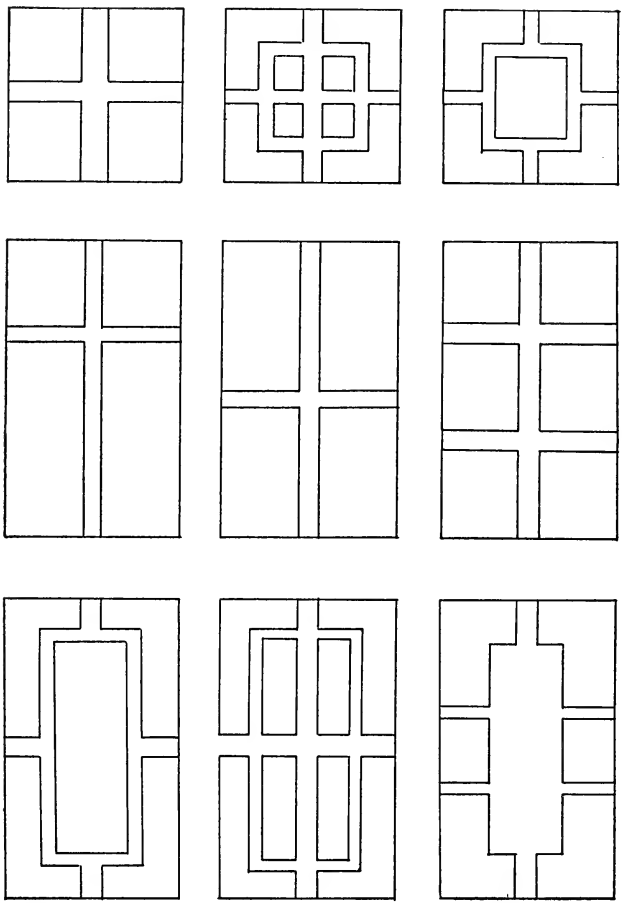


Fig. 80.—Some geometrical bases found in or back of the designs of most formal gardens

Primary colors may be used together if only small amounts are employed. It is not a good idea to have several shades of the same hue together, as in a bed of variously colored Geraniums where all clamor for supremacy. This is the same result as a discord in music. Plants should be separated into two factors, those possessing a dominant note, and those of a modifying note, the latter giving a suggestion of some other color, but still holding to the color scheme. Accent plants should appear not among the filler plants, but either in the background or in the facer row. Plant material in a border should be used in about the following proportions: Filler material, four parts; interest material, two parts; accent material, one part (Fig. 78). Keep pink and orange away from mottled foliage. Use white in good-sized areas—not in little patches.

METHODS OF USING COLORS IN A GARDEN

(1) To show a single color throughout the season. (2) To show one single color in a color scheme extending throughout the season. (3) To provide combinations changing throughout the season. (4) To create a gradual trend of color from end to end.

Distance tends to soften colors. Contrasting colors give emphasis to each other. Opposite colors give good contrast. Intermediate colors tend to produce a discord. White is a peacemaker—it can be used with any color. Bright colors can be used in exposed places; dark colors should be used in shaded places. Blue and purple will not reflect in a pool; use straw colors. Blue, next to magenta, is most difficult to use.

The Formal Garden

RULES AND SUGGESTIONS FOR ITS DESIGN
(See Figs. 80, 81 and 82)

1. Formal gardening should be attempted only on relatively small areas. For the ordinary family garden one-quarter to one-half acre would be the maximum allowance; for a very pretentious private mansion, one to two acres; for large public grounds, three to five acres. Best results are usually secured on areas considerably smaller than these maxima.

2. The area should be rectangular or nearly so. Circular or semi-circular areas can sometimes be designed, but they are difficult.

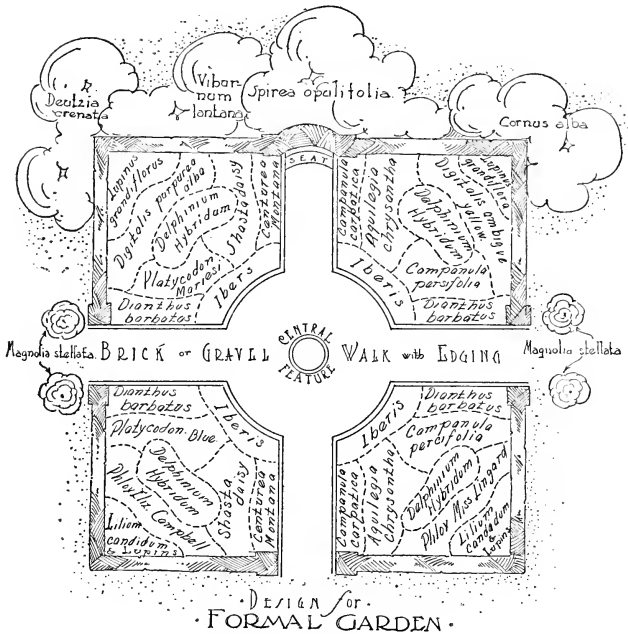


Fig. 81.—A suggested planting plan for a small, square formal garden

3. The area should be level or nearly so. Where it slopes distinctly it should be brought to two or more levels by terracing.

4. The formal garden should be wholly and distinctly enclosed by buildings, walls, hedges, or shrub borders. Occasional outlooks may be provided through or over these bounds, but they must be managed with great skill.

5. In the rectangular space no definite proportion between length and breadth is obligatory, but best results can usually be secured with a ratio of about seven or eight to five.

6. Each garden must have as its chief structural feature a major axis. This will nearly always be developed on the median longitudinal

line. In exceptional cases the main axis may be developed transversely to the greatest length of the garden.

7. At right angles to this major axis a minor axis might be developed. In some cases two or three minor axes are permissible. In rare cases also the minor axis may be merely indicated or entirely suppressed.

8. The minor axis or axes must be distinctly subordinate to the major axis in all particulars—in width, in length (usually), in interest and in termini (see 10, 11 and 12). In the case of a garden having several minor axes their combined length should be less than the length of the major axis.

9. Major and minor axes will often be treated as paths which should be nicely proportioned to the size of the gardens. The width of the path in the major axis should be about ten per cent of the width of the garden; that of the minor axis should be less.

10. Each axis must be provided with suitable termini, and these termini must appear definitively at the ends of the axes.

11. These termini must be objects of definite interest and beauty. Those most commonly employed are: Fountains, sundials, seats, arbors, pergolas (of doubtful suitability), statues, tea houses, and small buildings generally. A broad outlook over several miles of beautiful scenery does not terminate any axis; and it is never permissible to allow any axis to disappear into any exterior view.

12. These terminal features must be carefully proportioned in size and interest to the length and importance of the axes on which they are placed. Roughly speaking the height of the terminal features may be ten per cent of the total length of the axis. Features on the major axis must be distinctly larger and more interesting than those on the minor axis. In case several minor axes are developed, their termini must be plain and inconspicuous; nevertheless definite terminal features must be provided.

13. Fountains, arbors, belvideres, etc., must not be built within the garden so as to obstruct the general view. Under no circumstances should anything be built upon any axis intermediate between the termini in such a manner as to interrupt the axis line. The intersections of axes may often be marked by pools of flat water (not playing fountains). Pools in this position are attractive on account of the reflections they offer toward the principal points of view.

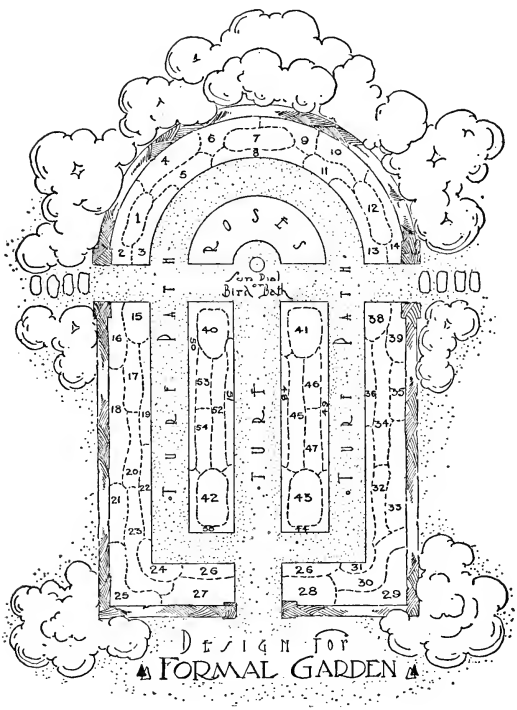


Fig. 82.—A design for a somewhat more elaborate formal garden. This well illustrates the axis construction and also the use of a terminal feature—the bird bath in this case

Key to Planting Plan

Key
(1) Delphinium belladonna
(2) Phlox Miss Lingard
(3) Nepeta Mussinii
(4) Thalictrum dipterocarpum
(5) Veronica subsessilis
(6) Anchusa italica
(7) Phlox Elizabeth Campbell
(8) Statice
(9) Aconitum Fischeri
(10) Aster Climax
(11) Veronica spicata
(12) Delphinium belladonna
(13) Nepeta Mussinii
(14) Phlox Miss Lingard
(15) Nepeta Mussinii
(16) Salvia pratensis
(17) Aquilegia hybrids
(18) Delphinium hybrids
(19) Alyssum saxatile
(20) Campanula Medium
(21) Hollyhocks
(22) Linum perenne
(23) Phlox Rynstrom
(24) Gaillardia grandiflora
(25) Helenium Riverton Beauty
(26) Dianthus (crimson)
(27) Iris Lohengrin
(28) Iris Rhein Nixe
(29) Helenium rubrum
(30) Euphorbia polychroma
(31) Alyssum saxatile
(32) Aquilegia hybrids
(33) Delphinium hybrids
(34) Phlox Rheinlander
(35) Hollyhocks
(36) Linum perenne
(38) Nepeta Mussinii
(39) Salvia pratensis
(40) Phlox La Vogue
(41) Phlox La Vogue
(42) Phlox B. Comte
(43) Phlox B. Comte
(44) Phlox Arendsii Greta
(45) Veronica longifolia subsessilis
(46) Anthemis tinctoria
(47) Stachys grandiflora superba
(48) Iberis gibraltica
(49) Phlox Lapham
(50) Plumbago Larpentæ
(51) Iberis gibraltica
(52) Veronica longi. sub.
(53) Ranunculus acris fl. pl.
(54) Campanula glomerata
(55) Matricaria Little Gem

14. Any treatment of the free, rectangular spaces outside the axes is better applied to the margins of such spaces than to the centers. The latter should be left free, or at any rate should not be made sites for mass effects of architecture or planting which would compete in interest with the axial termini.

15. Color effects, where attempted, are better developed along the boundaries, in wall, hedge or border plantings, than in the interior spaces.

16. Details of architecture and sculpture must, of course, be kept consistent throughout the garden. Simple and classical forms are usually to be preferred.

17. The flower bed should not be planted directly against the hedge (or other divisional planting), but should be separated from it by a two- or three-foot walk or path. This arrangement simplifies upkeep, makes cutting convenient from both sides of the beds and somewhat removes the plants in the bed from the influence of the shrubbery roots.

Rose Gardens

OWING to their requirements (and quite apart from their worthiness) Roses are best grown separately—in a Rose garden, for example. This "garden" may comprise a simple bed or a large space set apart and treated in a formal manner. Sometimes Roses are grown in the general "flower garden" in conjunction with herbaceous perennials, but where space permits they should be kept separate.

The site selected for Roses must be open, well drained and such as will enable them to get the full benefit of the sun, with perhaps a little shade in the afternoon; and, preferably, a southeastern exposure. Avoid low, moist places. If a goodly number of bushes are to be

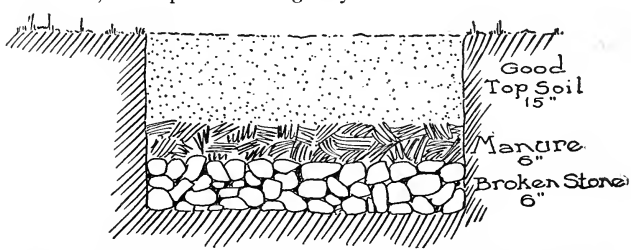


Fig. 83.—Section through a Rose bed to show advisable construction on all but the best drained soils—in which the layer of broken stone might well be omitted

planted, a garden can be designed sufficiently large to accommodate them; but whether just a few plants or a whole garden is decided upon, the beds must be made a practical width.

WIDTH OF ROSE BEDS

The size of the garden will have some bearing on the width of the beds, but in no case should they be more than four and one-half feet wide, and three feet is better. This is not only a practical consideration from the standpoint of cutting the flowers, but in addition, Roses produce a better effect when arranged in narrow beds, with a large area of turf surrounding them.

The shape or outline of the beds should follow the lines of the garden, leaving, if possible, a good, broad panel of turf down the central axis.

A bed three feet wide will accommodate two rows of bushes planted eighteen inches apart and nine inches from the edge of the bed.

Turf makes the most pleasing walk from a practical as well as from an esthetic standpoint, the groundwork of green forming a splendid foil for the rich colors in the Roses.

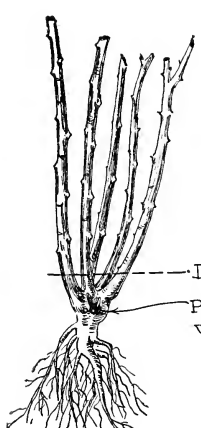


Fig. 84.—Planting a Rose bush—one case in which the reset plant should stand deeper than it grew before

PREPARATION OF ROSE BEDS

As previously stated, Roses must have good drainage, and to make sure of this it is advisable to supply drainage in each bed. While it must not be understood that the following instructions are absolutely imperative to successful Rose growing, it is certain that the better the soil and conditions they are given, the better the Roses will grow.

This, then, is the ideal: Dig out the bed two or two and one-half feet deep. On the bottom place a six-inch layer of broken stone or

fair-sized cinders. This can be covered with upturned sods (or, if small stone is used, the sods may be omitted). Over this spread a layer of old cow manure about six inches thick when tamped down. Then fill up the bed with good soil. The best prepared soil for Roses consists of two-thirds good clay loam and one-third well rotted cow manure. The beds should then be allowed to settle before planting (Fig 83).

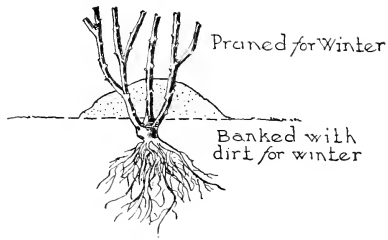


Fig. 85.—Protecting Roses in Winter. After the ground freezes, cover with leaves, litter or strawy manure

PLANTING ROSES

There is a wide diversity of opinion as to the best season for Rose planting, but many of our most successful amateur and professional growers prefer Autumn. They reason that the plant becomes thoroughly settled or established by Spring and has the advantage of a full season's growth beginning the first warm Spring day. Furthermore, the soil is certainly in a better condition for planting in the fall, being warm, moist and friable, whereas in Spring it is wet and cold from thawing frost and snow.

If planted in Fall, the bushes must be protected thoroughly, according to the method described later. Whether done in Spring or Fall, the actual planting operations are the same. It is most important that the roots be kept moist, as the Rose produces only a few fibrous or feeding roots, and those few must never be exposed to sun or air. Therefore, keep them covered right up to the actual moment of planting. On a bright or drying day it is a good plan to have nearby a bucket of water or, preferably, of clay puddle in which to dip the roots of each plant as it is unpacked or uncovered. In this way the root fibers are kept fresh and the plants suffer no check.

Just as in all other cases, the hole dug for the Rose plant must be amply large to permit spreading the roots without cramping them.

The best Roses are "budded;" that is, the desirable kind has been grafted on the more vigorous and hardy rootstock. Generally the "bud," or place where it was grafted or budded, is near to the roots,

and can be located by the abrupt growth of branches from the stem (Fig. 84). This point of union should be about two inches under the surface when the bush is planted, so the depth to plant depends upon the height of the bud on the stem. Of course, if this bud is seven or eight inches high it is not advisable to bury the roots so deeply. The object is to induce the plant proper to throw out its own roots, and to prevent suckering from the stock. Plant firmly and keep the surface soil loose. Should the soil be dry, the plants should be thoroughly soaked, but this is not often necessary.

If pot grown plants are used the planting season is lengthened into Summer, but the mere fact that the roots have been forced into a pot seems to suggest unnatural cramping, and field grown plants are recommended in preference.

PROTECTION OF ROSES

There are many methods of protecting Roses from Winter damage, but the most effective consists of mounding the earth around the base. The soil is scraped from between the bushes and heaped up around the base to a height of about six to eight inches (Fig. 85). This covers the stem and the lowest buds of all the main shoots and eliminates the possibility of water collecting and standing around the plant. After the surface is frozen solid, spread long manure, hay or straw among the bushes all over the bed. This layer should not be too heavy; a one- to two-inch thickness is plenty. The soil is thus kept from alternately thawing and freezing. In Spring, after all danger of hard frost is over, and before the sun becomes strong, the covering can be raked off and the soil leveled. Sometimes, where only a few plants are grown, they can be covered with inverted boxes or peach baskets. This has been found very effective in cold climates, especially if the basket is filled with leaves.

CLIMBING ROSES. Young Rose vines that are not firmly established on trellises, etc., can be laid down and entirely covered with soil and then manure. Old plants do not need this protection as the support itself serves to shelter the plant to some extent. However, it is safest even in the case of the old vines to mound up the soil at the base. Sometimes strips of burlap are nailed or fastened across the whole plant, hay being stuffed inside.

STANDARD OR TREE ROSES. The only sure method of keeping these alive through Winter is to dig on one side of the roots so that the whole plant can be bent over. Then dig a shallow trench as long

as the plant is high and bend the latter over into the trench in a horizontal position. It can be pegged down and then covered with soil and a layer of manure as suggested for bush Roses.

Another way is to leave the "tree" standing and cover it entirely with hay or straw, which is secured by winding burlap around the stem and then stuffing a plentiful supply of the straw among and over the branches, holding it in place by winding it in with the burlap. This, however, is not as effective as the former method.

PRUNING ROSES

While soil and location are chiefly responsible for the general vigor of the bush, it is mainly upon the method of pruning that the quantity and quality of flowers depend. To fully understand the correct way to prune it is necessary to know the habits of the Rose.

Bush Roses are divided by characteristic habits of growth into three distinct classes, namely, Shrub Roses, June Roses, and Monthly Roses.

SHRUB ROSES, such as the Japanese (*Rosa rugosa*) or Briar (*Rosa rubiginosa*) are treated just like ordinary flowering shrubs; as they should not be included in a formal Rose garden, they can be omitted here.

JUNE ROSES (Hybrid Perpetuals), typified by General Jack and Frau Karl Druschki, are vigorous growers and will make a tall bush in one season. It is, however, flowers and not wood that is desired, and we must prune with this aim in mind. *The flowers are produced on the current season's growth*—the shoot grows and during June the flower buds form on the end of it. Therefore, in order to produce young shoots the old (previous year's) wood must be cut back. When the bushes are planted in Autumn, the shoots may be shortened to prevent excessive swaying by the wind. The real pruning, however, must be done in Springj ust as the top buds begin to swell, which is, in most cases, from the middle to the end of March. At that time, cut away entirely all dead and thin, weakly shoots, leaving about three to five good, strong canes; these should be well placed to form the skeleton of a nice bush. Then prune these strong shoots back, to about four to six eyes (leaf buds)—which means leaving about eight to twelve inches of the old shoot. From these remaining eyes vigorous shoots will quickly grow. Now to secure few, but large blooms, allow these strong shoots to grow and pinch off all the side flower buds—allowing only one or two to develop at the end. All the nourishment will then

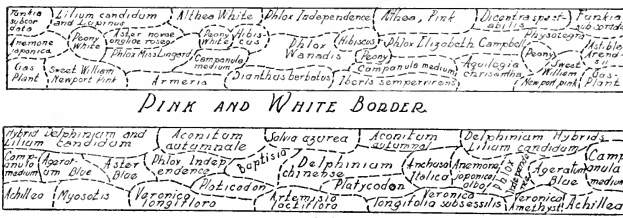


Fig. 86.—Two suggested planting plans for a border. Each of these is so arranged that it can be adapted to almost any space—a smaller number of plants being used in each section on a limited area, and a larger number in a more extensive garden. These plans can be used separately or as parts of a continuous border. A long period of flowering is covered by the materials used, all of which are good for cutting purposes

go toward producing an unusually large flower on a long stem. To produce a quantity of blooms, as is generally desired in a Rose garden, the strong shoots arising chiefly from the base of the plant should be pinched back occasionally. This will induce the plant to form more wood (shoots) and attain a bushier habit. There being more young wood, the result is naturally a greater number of flowers.

MONTHLY BLOOMING ROSES (Hybrid Teas, and Teas) such as La France and Caroline Testout, outrank all other classes for color, form and fragrance, and as a result the modern Rose garden is composed of practically all monthly Roses.

As in the case of June Roses, these may be shortened when planted in Autumn, but the Spring pruning should be more severe. Monthly Roses are more irregular in growth than the June Roses, but, as before, the best three or four branches or shoots should be selected and all others removed. These shoots should then be cut back to about three or four eyes, leaving about five to eight inches of the old shoot. Endeavor to prune so that the uppermost bud points outward, so as to prevent the new shoots from interlacing.

The size and quantity of the flowers can, in a measure, be controlled in the same manner as was recommended for June Roses.

CLIMBING ROSES (Wichuraiana and Multiflora), such as Dorothy Perkins, produce their flowers on last year's wood or rather on one-year-old shoots, so that the method in pruning must be different from that used in the case of bush Roses. The best time to do this work is

right after they have finished flowering, which is early in July. At this time the strong young shoots will be seen coming up from the base, and as these are the ones that will flower the following year, they should be encouraged. The old branches should be cut away entirely, or at least to a good, strong, side shoot; this will divert all sustenance to the young growths. Where climbing Roses are used for covering pergolas, arches and so on, it is, of course, not necessary to prune in this way. However, the plant can be kept young and vigorous by occasionally removing the very old wood.

Baby Ramblers (Polyantha) need very little pruning, but in cutting them back the same principles apply as with the monthly Roses, except, that, as stated, the growths need only a little shortening.

SELECTION OF VARIETIES

Because of the constant variation to which any list of "best Roses" is subjected on account of the passing of old and unreliable varieties, the creation of new ones, and the effect of different climates and soil conditions on different sorts, it is deemed best not to make any specific recommendations as to varieties here. There is no lack of helpful information for the prospective planner or planter, however, for the complete and detailed catalogs of the leading Rose growers and dealers, the several volumes of the "Rose Annual" of the American Rose Society, and a number of modern, authoritative cultural text-books are all at hand to solve the problem of what kinds and varieties of Roses to grow under any particular set of conditions.

The Perennial or Hardy Border

THE hardy border may be either simple and complete in itself, or a series of beds arranged in a geometrical design to form the formal flower garden. In each instance the treatment and preparation of the beds will be the same.

If a simple, informal border is desired, it should be so placed that a good view of it can be had from the principal rooms of the house, and also, if possible, from the front. Sometimes, by informally widening the shrub border, the "old-fashioned" flowers can be planted in front of the shrubs. Thus a very pleasing effect with a good background is obtained. A good, dark green background, not necessarily solid, is a big asset in the border. However, if the flower bed is to line a walk or fence, the obvious shape is long and narrow, with the planting in straight line.

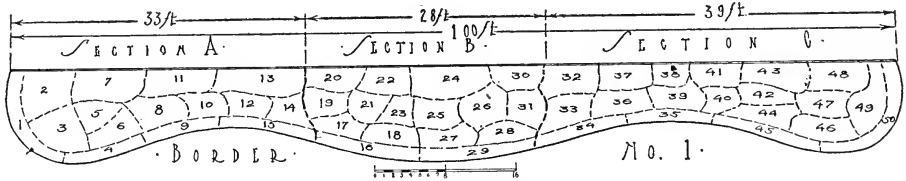


Fig. 87.—A plan (drawn to scale) of a simple but satisfactory border.

Key (For a Sunny Location)

(1) 20 Hardy Pinks, Her Majesty
(2) 15 Iris germanica, Loreley
(3) 10 Helenium magnificum
(4) 20 Plumbago Larpentæ
(5) 10 Echinops Ritro
(6) 10 Funkia lanceolata
(7) 13 Artemsia lactiflora
(8) 10 Hemerocallis Dumortierii
(9) 20 Campanula carpatica
(10) 10 Aster amellus
(11) 15 Physostegia virginica
(12) 15 Tritoma Pfitzeri
(13) 12 Gypsophila paniculata
(14) 15 Platycodon grandiflora
(15) 15 Arabis alpina
(16) 15 Veronica incana
(17) 10 Dictamnus fraxinella
(18) 15 Aquilegia chrysantha
(19) 15 Phlox, Mrs. Jenkins
(20) 15 Anchusa Var. Dropmore
(21) 10 Heliopsis zinniæflora
(22) 10 Helenium aut. superbum
(23) 10 Lobelia cardinalis
(24) 15 Boltonia asteroides
(25) 15 Delphinium hybrids
(26) 10 Pyrethrum uliginosum
(27) 15 Stokesia cyanea
(28) 15 Veronica spicata rosea
(29) 20 Alyssum saxatile compactum
(30) 10 Salvia azurea grandiflora
(31) 10 Chelone Lyonii
(32) 10 Digitalis gloxiniæflora
(33) 10 Iris germanica, Lohengrin
(34) 10 Rhexia virginica
(35) 10 Iris cristata
(36) 10 Rudbeckia Newmannii
(37) 10 Aster, Climax
(38) 10 Cephalaria alpina
(39) 10 Doronicum excelsum
(40) 10 Pentstemon pubescens
(41) 10 Hardy Chrysanthemums
(42) 10 Scabiosa caucasica
(43) 10 Boltonia latisquama
(44) 10 Phlox R. P. Struthers
(45) 20 Veronica rupestris
(46) 10 Veronica longifolia subsessilis
(47) 10 Lysimachia clethroides
(48) 10 Iris Kaempferi
(49) 10 Sedum spectabile
(50) 20 Hardy Pink, Homer

Key (For a Shady Location)

(1) 15 Aquilegia flabellata nana
(2) 15 Anemone japonica alba
(3) 10 Pulmonaria azurea
(4) 20 Cerastium tomentosum
(5) 10 Baptisia australis
(6) 10 Funkia lanceolata
(7) 15 Digitalis gloxiniæflora
(8) 10 Hemerocallis fulva
(9) 20 Myosotis semperflorens
(10) 10 Euphorbia corollata
(11) 10 Thalictrum aquilegifolium
(12) 10 Spiræa chinensis
(13) 10 Hemerocallis Thunbergii
(14) 10 Campanula glomerata superbum
(15) 15 Plumbago Larpentæ
(16) 15 Veronica incana
(17) 10 Anthericum liliastrum
(18) 15 Calimeris incisa
(19) 10 Chelone glabra alba
(20) 10 Funkia cœrulea
(21) 10 Spiræa palmata
(22) 10 Artemesia lactiflora
(23) 10 Echinops Ritro
(24) 10 Spiræa aruncus
(25) 15 Anemone, Queen Charlotte
(26) 10 Hemerocallis, Sovereign
(27) 15 Hypericum Moserianum
(28) 15 Polemonium reptans
(29) 15 Tunica saxifraga
(30) 10 Aconitum, Spark's var.
(31) 10 Lobelia cardinalis
(32) 15 Chelone Lyonii
(33) 10 Funkia subcordata
(34) 10 Festuca glauca
(35) 20 Primula vulgaris
(36) 10 Platycodon grandiflorum
(37) 10 Thermopsis carolinianum
(38) 10 Padanthus sinensis
(39) 10 Satureia montana
(40) 10 Trollius europæus
(41) 10 Tradescantia virginica
(42) 10 Saxifraga cordifolium
(43) 10 Hermerocallis, Florham
(44) 15 Tricyrtis hirta
(45) 20 Veronica rupestris alba
(46) 10 Spiræa filipendula fl. pl.
(47) 10 Lobelia syphilitica
(48) 15 Anemone, Whirlwind
(49) 10 Lysimachia Fortunei
(50) 20 Viola cornuata, Admiration

WIDTH OF BEDS

This will vary according to the size of the place, the location of the beds, and their length. It should not be more than about six feet, otherwise it will be impracticable to cut or pick flowers without stepping on the bed. In cases where they can be reached from only one side, it is advisable to keep the width down to a maximum of four feet.

PATHS

The walks or paths in the perennial garden should be at least three feet wide, with the main or central walk still wider. The choice of material and type of construction is a matter of personal preference, but a turf path, as in the Rose garden, gives the best "ground" as a setting for the flowers. A Box-bordered brick walk is also in harmony with an old-time effect. If a gravel or dirt walk is used, it is advisable to leave a strip of turf at least eighteen inches wide between the bed and the walk.

PREPARATION OF BEDS

The success of the garden or border depends upon the preparation of the soil. Many perennial roots go deep; therefore it is essential that the border be dug to a depth of at least eighteen to twenty-four inches. If the soil is at all impoverished, enrich it by adding rotted manure and bonemeal. If drainage is necessary, it can be provided by the same method as described for Rose beds (page 88). The surface should be quite friable, not clammy, and the whole border should be allowed to settle before it is planted.

PLANTING

The actual operation of planting is taken up under the general heading of "Planting" (page 67), but perhaps it would be well to emphasize the importance of setting the plants at the right depth—neither too deep nor too shallow. Keep the crown of leaves above the ground level, but be sure all the roots are well covered.

ARRANGEMENT

The design, width and location of the beds and the succession of flowers should be considered when selecting and placing the plants. Color harmony is also a most important point. This subject (color) is treated more fully elsewhere (page 81). The most vigorous and

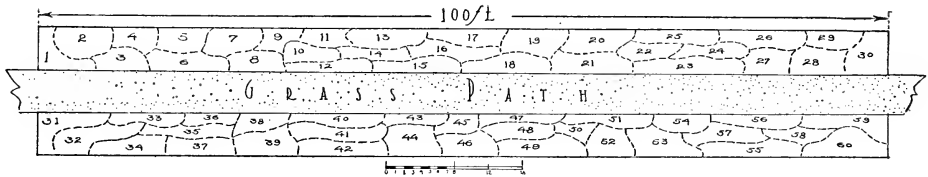


Fig. 88.—A plan (also to scale) for a double border along a grass path.

Plants for a sunny location—

(1) 15 Sedum spectabile, Brilliant.
(2) 10 Gypsophila paniculata.
(3) 10 Dictamnus fraxinella alba.
(4) 10 Physostegia virginica.
(5) 10 Digitalis gloxiniæflora.
(6) 15 Stokesia cyanea.
(7) 10 Aster, Beauty of Colwall.
(8) 15 Phlox, Rheinlander.
(9) 15 Delphinium chinense.
(10) 10 Calimeris incisa.
(11) 10 Echinops Ritro.
(12) 20 Veronica incana.
(13) 10 Anchusa var. Dropmore.
(14) 15 Aquilegia chrysantha.
(15) 20 Plumbago Larpentæ.
(16) 15 Chelone Lyonii.
(17) 10 Helenium rubrum.
(18) 10 Campanula persicifolia.
(19) 10 Coreopsis verticillata.
(20) 10 Salvia Pitcherii.
(21) 15 Iris, Walhalla.
(22) 15 Platycodon grandiflorum.
(23) 15 Phlox, Mrs. Ingalls.
(24) 10 Hemerocallis, Gold Dust.
(25) 10 Aster, St. Egwin.
(26) 10 Pæonias (assorted).
(27) 10 Veronica subsessilis.
(28) 15 Œnothera, Youngii.
(29) 10 Iris, Lohengrin.
(30) 10 Coreopsis rosea.
(31) 10 Veronica amethystina.
(32) 15 Statice latifolia.
(33) 10 Lychnis viscaria splendens.
(34) 10 Aster, Climax.
(35) 10 Lobelia cardinalis.
(36) 15 Phlox, Gefion.
(37) 10 Iris. Mme. Chereau.
(38) 10 Dictamnus fraxinella.
(39) 10 Salvia azurea grandiflora.
(40) 10 Lysimachia Fortunei.
(41) 10 Pæonias, assorted.
(42) 10 Boltonia latisquama.
(43) 10 Doronicum excelsum.
(44) 15 Delphinium, Belladonna.
(45) 10 Aster, Feltham Blue.
(46) 10 Hemerocallis Thunbergii.
(47) 15 Alyssum saxatile compactum.
(48) 15 Scabiosa caucasica.
(49) 10 Anchusa, Opal.
(50) 10 Oriental Poppy, Queen Alexandra.
(51) 15 Aquilegia nana alba.
(52) 10 Pyrethrum uliginosum.
(53) 15 Eupatorium cœlestinum.
(54) 15 Phlox, Thor.
(55) 15 Hardy Chrysanthemums.
(56) 10 Helenium magnificum.
(57) 10 Digitalis gloxiniæflora.
(58) 10 Rudbeckia Newmannii.
(59) 20 Phlox divaricata.
(60) 10 Achillea, The Pearl.

Plants for a shady location—

(1) 15 Ajuga reptans rubra.
(2) 15 Anemone, Queen Charlotte.
(3) 10 Hemerocallis Dumortierii.
(4) 10 Baptisia australis.
(5) 10 Digitalis gloxiniæflora.
(6) 10 Dielytra eximia.
(7) 10 Eupatorium ageratoides.
(8) 10 Thalictrum adiantifolium.
(9) 10 Pardanthus sinensis.
(10) 15 Trollius europæus.
(11) 10 Aconitum, Spark's.
(12) 20 Epimedium niveum.
(13) 10 Spiræa aruncus.
(14) 15 Aquilegia chrysantha.
(15) 10 Chrysanthemum arcticum.
(16) 15 Chelone Lyonii.
(17) 10 Boltonia asteroides.
(18) 10 Mertensia virginica.
(19) 10 Funkia cœrulea.
(20) 15 Anemone japonica alba.
(21) 10 Sedum spectabile Brilliant.
(22) 10 Lobelia syphilitica.
(23) 10 Spiræa filipendula.
(24) 10 Hemerocallis, Gold Dust.
(25) 10 Eupatorium Fraseri.
(26) 10 Pæonias, assorted.
(27) 15 Pulmonaria azurea.
(28) 10 Hypericum Moserianum.
(29) 10 Tradescantia cœrulea.
(30) 20 Lily of the Valley.
(31) 10 Funkia subcordata.
(32) 10 Pæonias, assorted.
(33) 20 Primula vulgaris.
(34) 10 Artemesia lactiflora.
(35) 10 Lobelia cardinalis.
(36) 20 Gentiana Andrewsii.
(37) 10 Thalictrum glaucum.
(38) 10 Salvia uliginosa.
(39) 10 Spiræa palmata.
(40) 10 Lysimachia Fortunei.
(41) 10 Aconitum Fischerii.
(42) 10 Digitalis gloxiniæflora.
(43) 10 Doronicum excelsum.
(44) 15 Cimicifuga racemosum.
(45) 15 Campanula glomerata.
(46) 10 Hemerocallis Thunbergii.
(47) 20 Myosotis semperflorens.
(48) 15 Chelone glabra alba.
(49) 10 Lythrum roseum superbum.
(50) 10 Calimeris incisa.
(51) 20 Aquilegia flabellata nana.
(52) 10 Spiræa ulmaria fl. pl.
(53) 15 Eupatorium cœlestinum.
(54) 10 Funkia lancelota.
(55) 10 Clematis recta alba.
(56) 10 Lysimachia clethroides.
(57) 10 Pyrethrum uliginosum.
(58) 15 Anemone, Whirlwind.
(59) 10 Saxifraga cordifolia.
(60) 15 Euphorbia polychroma.

tallest growing kinds should not, of course, be planted at the front, but neither should *all* the tall plants be in the background. This plan is commonly followed, however, with the result that the "face" of the border is rather flat with no interesting combinations as to habits of growth. A much better effect is secured by allowing the "spiky" materials (as Foxgloves, Larkspurs, etc.) to stand out boldly in striking contrast to lower growing or drooping plants. Even along the edge this effect of contrast can be carried out on a smaller scale. Remember, too, it is always best to plant in little colonies or clumps to give a mass effect; furthermore, the cultivation and care are then easier. Possibly, a Peony occasionally dotted along the border is all right, but as a rule such "spot" plants should be omitted from the flower border.

Many perennials have beautiful flowers but poor foliage, and therefore should not be largely massed. Such kinds should be arranged in small groups and interspersed with some other perennials or bulbs that will flower afterward to hide or improve the appearance of the poor foliage.

For succession of bloom some bulbs should be included; this subject is discussed on another page (page 98).

ANNUALS

The purely perennial border will at some periods during the season, be practically devoid of flowers, or will permit too much bare soil to be seen. To overcome this we can rely upon annuals. The range of selection is great, making it an easy matter to plan the border. With the help of annuals a constant succession of bloom is assured and the bed is always full of plants covering Mother Earth.

With this object in view, it is an admirable idea to have a supply of annuals growing in flats (shallow boxes) or pots, that can be transplanted to the border whenever the necessity arises.

Some perennials are beautiful for a week or so—while the flowers last—but then die down, leaving bare spaces. Put in a few annuals, and the problem is solved.

Some of the hardy plants may die when it is too late to plant others. Again, use annuals.

Aside from this use of annuals in supplementing perennials, some excellent gardens and borders are made up entirely of annuals. In such cases the work must be attended to each year.

Shrub borders can be greatly improved by introducing annuals along the front to lighten the sometimes heavy, monotonous bank of green foliage.

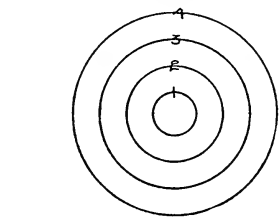


Fig. 89.—Diagram for use in estimating number of bulbs required for planting a circular bed

GENERAL CARE

The protection of herbaceous perennials has already been discussed, but if one is to have a successful flower border or garden some attention is necessary during the growing season. The soil should be constantly worked so that the surface is kept loose and neat.

Some kinds of plants spread rapidly and must be kept in check by division, which can be done either in Autumn or early Spring. The heavy, tall flower spikes should be staked—before the plant actually needs support—and the spike supported as it grows. Then there are always some garden pests to fight, and the sooner they are killed the better will the plants thrive.

BULBS

In the informal flower border, it is advisable to omit all stiff growing sorts such as Hyacinths; but some Spring- and Summer-flowering bulbs should certainly be included in the plan.

Narcissi and Crocus can be treated as perennials—being left in the ground from year to year. Sometimes this treatment can be successfully applied to Tulips, but any choice varieties should be taken up and stored in a cool, dry place.

While these bulbs are really the basis of the Spring floral season, the Summer flowering kinds are no less useful. As an example, the Gladiolus and the Montbretia can be cited—they bloom at a time when the display of flowers in the border is at a low ebb. Such bulbs can be interspersed throughout the border, clumping them around the particular perennials that will be through blooming by the time these bulbs are coming along.

TREATMENT OF BULBS

As intimated above, bulbs can be divided into separate classes for specific treatment. The following table indicates by letter to which class each bulb belongs, and the treatment required:

A. Can be left in the ground year after year and regarded simply as herbaceous perennials.

B. Should be dug up after the first frost; then the old leaves should be cut off and the bulbs cleaned, and allowed to dry in the sun for awhile. Then store them in a dry place, where it is cold, but does not freeze. They can be stored in dry soil or sand, or simply stored (best in single layers) as they are.

C. Should be dug after the first frost, or when they have died down, then cleaned and allowed to dry in sun. Leave about six or eight inches of the dried foliage attached to the bulb. Tie them in small bunches (10 to 20 bulbs) by means of the old leaves and lay them in a cool, dry place.

PLANTING TABLE FOR BULBS

Name	Planting			Height	Blooms	Class
	Season	Depth Inches	Apart Inches	Inches		
Canna	May	3–4	18–36	24–60	Aug.	C
Crocus (Spring)	Oct.-Nov.	3	2–4	3–5	Mar.-Apr.	A
Crocus (Autumn)	Spring	3	3–4	4–6	Sep.-Oct.	A
Crown Imperials	Spring	4–5	5–6	24–36	Aug.-Sep.	C
Daffodils	Oct.-Nov.	5–6	3–6	12–18	Apr.	A
Jonquils	Oct.-Nov.	5–6	3–6	12–18	Apr	A
Poet's Narcissus	Oct.-Nov.	6	3–5	12–18	Apr.	A
Dahlias	Spring	6	18–36	36–72	Sep.-Oct.	C
Eremurus	Spring	3–4	24–36	48–72	Aug.-Sep.	B
Gladiolus	May	2–4	6–12	24–42	July-Aug.	C
Hyacinths (Dutch)	Oct.-Nov.	4–5	6	9–15	Apr.-May	B
Roman	Oct.-Nov.	4–5	6	9–15	Apr.-May	B
Grape	Oct.-Nov.	2	2–3	5–8	Apr.-May	A or B
Summer	Spring	3–5	6–12	24–36	July-Aug.	B
Iris, English	Oct.-Nov.	3	4–5	18–30	May	C or A
Spanish	Oct.-Nov.	3	4–5	18–30	May	C or A
Montbretias	May	3–4	3–5	18–24	July-Aug.	C
Snowdrops	Oct.-Nov.	2	3	3–5	Mar.-Apr.	A
Squills	Oct.-Nov.	3	3–4	4–6	Apr.	A
Tulips	Oct.-Nov.	3–4	5–6	15–30	Apr.-May	B

The Rock Garden

THIS is really one of the most interesting and intensive phases of horticulture, chiefly because the plants used are dwarf and grow naturally in a limited space. The native habitat of these rock plants or Alpines is at a high elevation, near the snow line on the mountains, among the rock and boulders deposited and broken by glaciers and other natural forces. The growing season in these locations is very short, and to withstand such climatic and soil conditions these little plants are of necessity hardy and peculiarly fitted to nestle

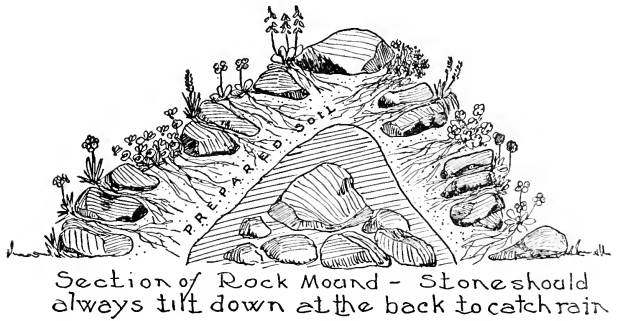


Fig. 90.—Cross section through a well prepared rockery or part of a rock garden

in the crevices and pockets of the rocks where soil is deposited and root hold can be found. In building a rock garden, natural conditions must be duplicated as nearly as possible.

LOCATION

The rock garden is the farthest extreme from the formal garden and must be kept quite separate from that vicinity of the grounds unless very effectively hidden. The ideal spot is a rugged, picturesque piece of ground where the natural formation or deposit of rocks and boulders suggests this treatment. Such a place should have no large trees actually on it, as the roots would impoverish the soil, but some shade from the hot sun is desirable. A northern or northeasterly exposure is perhaps best. The branches of any adjacent trees should not overhang the garden as the drip will rot the rock plants.

PREPARATION

When the site has been decided upon it should be dug deeply and the soil enriched and lightened, if necessary, with grit and leafmold. The soil that is to be used between the stones for the plants to grow in, should be specially prepared. A mixture of light loam (four parts), leafmold (two parts), road-grit, or crushed limestone rocks (one part), and rotten manure (two parts) is most satisfactory (Fig. 90).

ROCKS AND STONES

The best effect is obtained by using stones from the place itself or a nearby source as their color and formation will be quite naturalistic. Select those that have been lying on the surface and have an old, weather-beaten appearance. They will, of course, be of all sizes; the average size will depend on the size of the rock garden. A large garden demands large stones, but even in a small garden a few large stones help the appearance wonderfully. It is also wise to select a type of stone that does not crumble easily and then keep to the one kind throughout the garden. The two chief classes of rock are *igneous* and *stratified* (Fig. 91). The former is recognized by the irregular shape of its fragments and the fact that no layers are seen in its formation—granite is a good example of this type. The other may be recognized immediately by the parallel, horizontal lines, which form the strata of the stone. These are seen very clearly in limestone rocks, shales, etc.

STYLE

The two important styles in rock gardening are the outcome of the use of the two widely different forms of stone described above. If the stratified stone is used, the rock garden should be arranged to follow that stratification throughout the garden in "uniform irregularity." That is, the one plane of stone, although broken in various places, should be seen right through the garden. This does not mean, however, that all stones should be laid on the same lines and angle. In Nature, large pieces are broken off outcropping ledges by natural forces, with the result that the dislodged pieces tumble down in any position, but the unity is still apparent in the stratification and cleavage. In building the rock garden this ef-

Fig. 91.—The two chief classes of rock

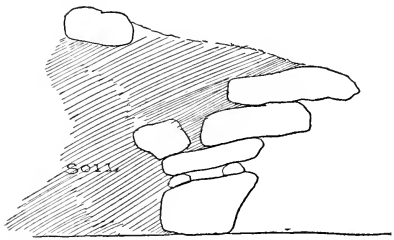


Fig. 92.—An overhanging rock is an interesting feature in a rock garden. This cross section shows how it should be built up

fect can be imitated by arranging smaller pieces of rock at the foot of a sloping rock ledge to give the effect of naturalness. Needless to say, the color and general formation of the small rocks must be quite similar to those of the ledge.

Where the igneous or non-stratified stone is used, the operation is really not difficult, but just as pleasing when well done. There is a natural formation called Tufa stone, apparently the work of some subterranean agency, which, being full of holes (resembling a sponge) is particularly adapted for rock garden building on a small scale. This stone is extremely porous and irregular, having natural pockets that are ideal for planting.

BUILDING

The largest stones should be placed at the base and form the background; in their arrangement they should suggest the original cause of their exposure—namely, upheaval, or glacial deposit.

The face of the rockery may, in the same garden, range from a gentle slope to almost perpendicular; in some instances, more particularly in large gardens, the overhanging rock is very effective. The construction of this type is best explained by an illustration (See Fig. 92). It will be seen that each stone is effectively tied to the others and all appear inherent in the soil.

Each stone should slope backward, so that the water will run in toward the rockery and soak the soil between the rocks. As each stone is laid, ram the prepared soil in every crevice and pocket so that not the smallest air hole is left. This is possible only by building, stone by stone, and by working the soil into the crevices with a stick.

It is most important that the soil between the stones be kept moist, so in the event of a stone overlapping a pocket see that the rain will in some way be drawn into the latter. Any settling of the stones will not affect their stability if they have been laid correctly.

The rockery is best built by sections. First, arrange a group of various sized stones—really a miniature rock garden—then start on

another section, repeating in a different formation another such group and making a consistent chain of rocks, or one large, rocky ledge.

Thought should be given to providing access to all parts of the rockery, by means of appropriate paths. The best style is simply a trail of stones with a more or less flat surface—worked harmoniously in with the scheme and planted about. These paths should bring one to the most interesting points. The central or main path can be made of irregular broken flagstone, crushed stone, or gravel.

No set rules can be stipulated as to arrangement, hence the difficulty of trying to explain ideas. The best way to gain a clear conception of this matter is to see and study an actual example either in Nature or in some other man-made rockery.

PLANTING

Undoubtedly the greatest charm of the rock garden should be the effect obtained by clothing the rock faces. Always plant in little colonies of the same kind, that is, set half a dozen or so plants of one variety in the same spot in the garden. Give the most favorable spots to the choicest Alpine gems, and keep the larger, more vigorously growing sorts away from their weaker brothers. Don't try to cover all the rockwork, rather let it crop out boldly at various spots. Many rock plants, such as the Saxifrages, have a leaf growth that forms a dense rosette which would rot if water lodged in the crown. Such kinds are best planted on a slant, or even vertically. Pot grown plants are best if the rockery is already constructed, but if the planting is done as the building progresses, field grown plants are best used.

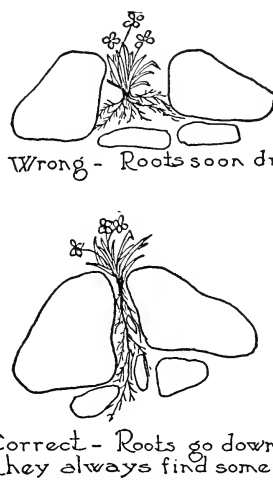


Fig. 93.—The wrong and the right way to set Alpine plants in a rock garden. Provide deep soil pockets to retain moisture and harbor the plant roots

The roots can then be laid their full length between the stones.

By interspersing dwarf evergreens throughout the rock garden an all-year effect is obtained, and the pigmy Spruces and Junipers seem particularly happy in such a location. On the borders, some taller growing, but more or less dense shrubs can be installed as a background and to give some height; and even in the rockery proper, some of the more compact growers will relieve any flatness and lend an appearance of age to the planting.

If the rock garden boasts a pool, the moisture-loving plants should be found in that vicinity; in fact the whole affair should duplicate a piece of Alpine scenery.

IRRIGATION

As previously stated it is most important that the soil be kept moist. One of the best methods of assuring this condition is to install a line of small (two-inch) tile about one foot under ground at the head or top of the rock garden, and connect it (by means of rubber hose) to a faucet (Fig. 50, page 47). The trench in which the pipe is laid should be dug with the bottom inclined toward the garden, and a layer of crushed stone spread in it. Then the tile can be laid and covered with stone or cinders. This insures a thorough soaking of the soil around the plant roots and between the stones.

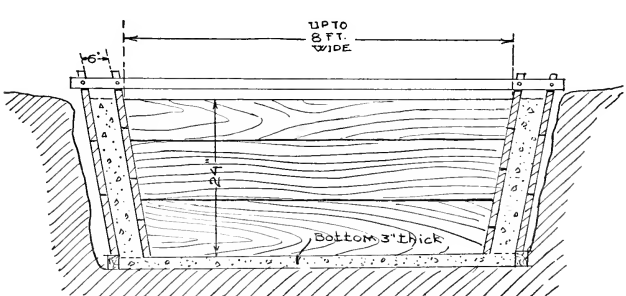


Fig. 94.—Section to show construction details of a small, formal pool of concrete. Unless the sides of the hole were dug accurately, it would usually be necessary to brace the wall forms on the outside as well as the inside, and at the bottom as well as the top

Water Gardens

POOLS FOR LILIES AND OTHER AQUATICS

IT IS possible for any flower lover to grow Water Lilies. All that is necessary is a few square feet of water surface in a sunny spot. For the smaller garden, one can cut a water barrel in two about eighteen inches from the bottom, fill it two-thirds full of rich soil and sink it in the ground at least six inches, although deeper is better. Plant one or two Lilies, then fill with water.

The next water garden in size may be made of a hogshead (about six feet in diameter). Saw in half (to make two ponds); sink in the ground as before; and plant five or six Lilies in each. These ponds should be flushed with a garden hose at least once a week to prevent stagnation.

Larger pools lend themselves to a wider variety of treatment as to shape, size and kinds of plants used. First of all it should be decided whether the pool is to fit into a formal scheme, in which case it should be regular in outline; or is to serve as a naturalistic feature and, is, therefore, to be treated informally.

FORMAL POOLS

For a small, brick pond excavate to a depth of about two and one-half feet, curving the sides to an angle of about forty-five degrees. Lay the floors first and then the sides, covering the whole with a coating of cement. Concrete pools are made in practically the same manner except that the frost line must be considered (See details in Fig. 94). In arranging the water supply for such a pool, it is found

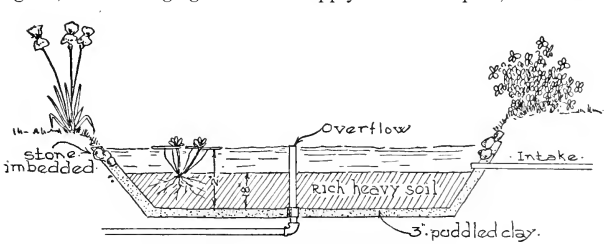


Fig. 95.—Cross section of a puddled clay pool showing construction of bottom and margins, intake and overflow pipes, and also depths of soil and water needed

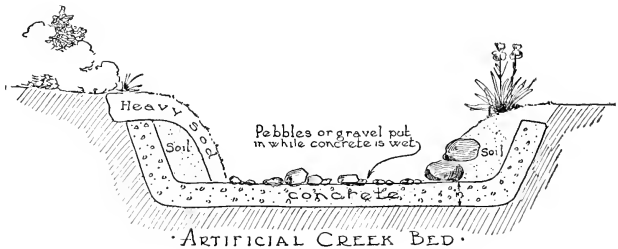


Fig. 96.—Cross section of an artificial creek bed or informal shallow pool in which the concrete bottom and sides are hidden

most practical to simply have the water come from a faucet so that it may be turned on from time to time to remove any scum which may accumulate on the surface.

The construction of large formal pools should be left to an experienced contractor as they require special reinforcing and skilled workmanship.

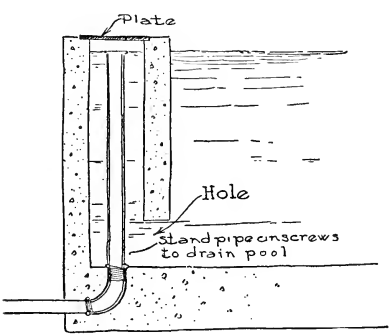


Fig. 97.—Cross section of portion of a concrete pool showing method of combining and also concealing the drain and overflow pipes

INFORMAL POOLS

Ponds made entirely of concrete are best adapted only to the small, formal garden. The most economical method of construction for the informal pool is the clay puddling process in which an impervious layer is made over the bottom and sides of the pool. After deciding upon the shape and the size, excavate the whole to a depth of about three feet (Fig. 95). On a wooden platform spread a wheelbarrow load of clay and pulverize it to pieces no

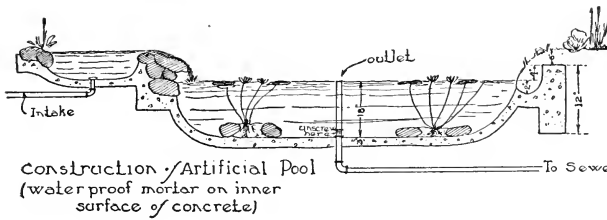


Fig. 98.—Cross section of an attractively edged pool of concrete with a supplementary, smaller pool and waterfall provided at one end for added effect

larger than a walnut. By adding water, a little at a time, and pounding with a wooden maul reduce the whole to a putty-like consistency; then start moistening and pounding the second load, etc. Having reduced sufficient clay to a proper consistency spread it about three inches thick over the sides and bottom of the pool, beating it down as laid.

In treating the margins of such a pool it is best to lay rocks in the clay down the bank to about a mean water level; this will prevent a gradual washing away of the clay at the water's edge. If water plants are to be used in the pool put in a layer of rich soil twelve inches to fifteen inches deep; then let in enough water to cover this layer about three inches deep and let the pond stand for a few days to warm up before planting.

PLANTING

In concrete or brick pools it is necessary to plant in some sort of a receptacle, either fixed or movable, the size ranging from one by two feet to two by four feet and the depth from ten to twelve inches. If these pockets are made of brick, do not cement the joints, but merely build a loose wall. Tubs make good receptacles in which to plant.

WINTERING

Hardy Water Lilies will take care of themselves, and natural ponds may remain undisturbed. The more tender varieties planted in loose tubs may be removed to a cool cellar, or, if they cannot be removed, drain off the water and cover the plants with hay, leaves, etc., and place a few planks over the top. Really tender day bloomers are quite difficult to winter over, and unless the grower understands the subject thoroughly it would not be advisable for him to attempt the growing of these tender sorts.

MARGINAL TREATMENT OF INFORMAL POOLS

Many well designed and well constructed pools often lack proper treatment of their bare concrete edges. It is this particular portion that really needs most attention as it will conceal much of the handwork of man. In the construction of the informal pools shown in Figs. 96 and 97 the concrete will not be seen at all if properly made. When water-loving plants are not planted along the margin, sod should be used. Make the sides and bottom of at least three inches of reinforced concrete; four to six inches is better. The bottom surface of the excavation will serve as a form for the pool. See that the outlet pipe has a connection at the bottom that can be unscrewed so that the pool may be drained (Fig. 97).

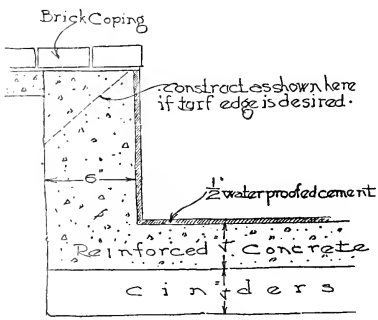


Fig. 99.—Section through side of a shallow pool to show details of concrete and foundation construction and arrangement of brick coping, if desired; also line to be followed if turf margin is wanted instead of coping

There is always a certain charm about the noise of running water, and this feature may be produced by constructing a small, additional pool at one end of the larger one (Fig. 98). If Water Lilies are to be grown in the pool let only a small amount of water run over the rocks, as the plants do not thrive where water is too active. The introduction of a few goldfish will keep the water rid of mosquitoes.

COPING FOR FORMAL POOLS

Good brick laid on edge makes an excellent coping for formal pools (Fig. 99). Sandstone or limestone of uniform thickness laid quarry face also makes a good coping. It should not extend over three inches above the surrounding surface—the closer it is, the better.

Where a sod edge is desired, the pool should be constructed as shown in Fig. 96. This arrangement will provide ample soil in which to grow turf right up to the water's edge.

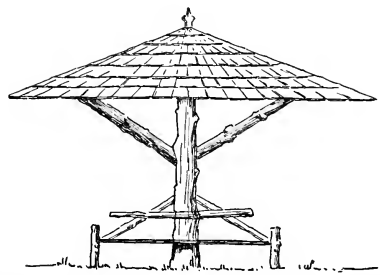


Fig. 100.—Sketch or elevation of a simple rustic garden seat with shelter

GARDEN ACCESSORIES

SUNDIALS

AS AN ornament for the garden there is nothing better than the sundial. Although sundial time and clock time do not agree except on four days during the year (namely, June 15th, September 15th, December 14th, and March 15th), they are certainly close enough to permit the dial to serve its real purpose in the garden.

There are two kinds of sundials, horizontal and perpendicular, the latter being affixed to the side of a building or wall and therefore not so often of use in the garden. The dial proper is mounted on a pedestal, usually of stone or marble, and must be absolutely level, with the gnomen or shadow-casting piece pointing to true north. The upper surface of the gnomen must form an angle with the dial that shall be the same number of degrees as the degree of latitude for the place in which the dial is to be used.

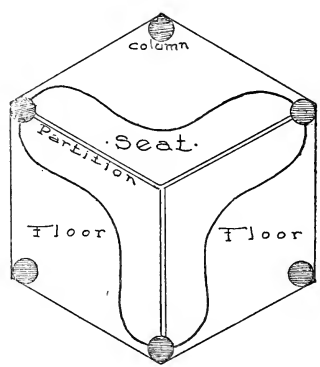
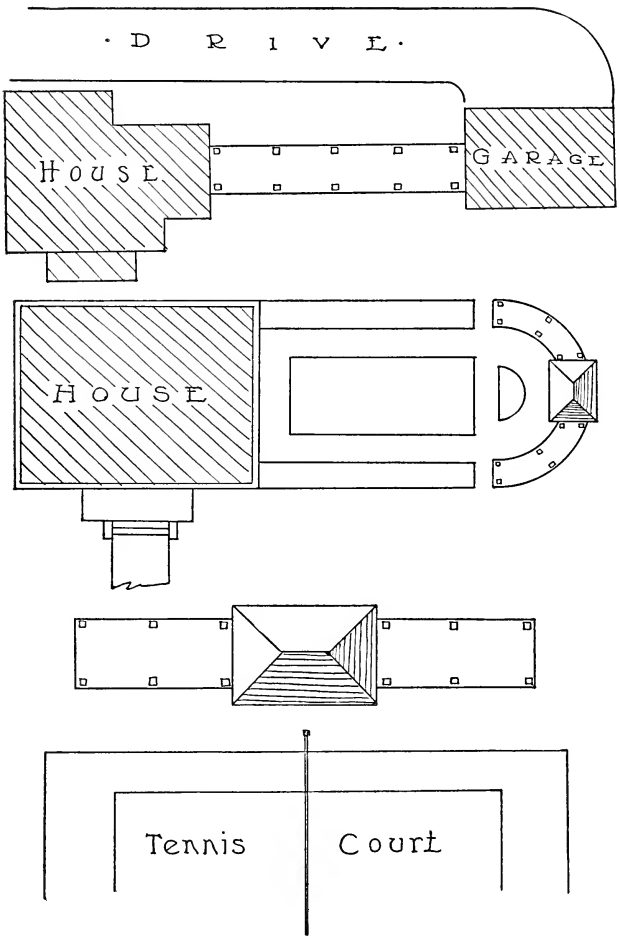


Fig. 101.—Suggested plan of a summer house with open sides, especially suited for a high location where views can be had in all directions



(For caption see facing page)

There are a number of appropriate settings in the garden for the sundial. It may be set at the end of a garden walk, as a feature located on some axis of the formal garden, or on the lawn of the informal garden where it can be seen from some prominent room and window of the house. For practical use the sundial must always be set in the open where scarcely any shade will fall on it. The pedestal for the dial may be made of almost any solid material, from classic marble to a pile of field stone, but it *must* be solid, as any tilting will throw the gnomen off the correct angle.

SEATS

A seat in the garden is as important as a chair in the house. Seats vary in importance from the simple wooden bench to the elaborate semi-circular exedra as found in the typical Italian gardens. A seat must harmonize with the design of the garden; that is, one would not place a rustic or rough wood seat in a formal garden. The seat should blend in with its surroundings, yet serve a practical use.

One important consideration in the choice of a material for the garden seat is its lasting qualities, for this furniture is exposed to all the outdoor elements. This is why we find so many garden seats made of stone. Stone seats may not be as comfortable as wooden ones, yet if considerable care and attention is not given the wooden seat from year to year, it will soon rot and fall to pieces. About the best material for wooden seats is Red Cedar with the bark left on; but all parts that come in contact with the ground should be given a coat of some preservative, such as creosote.

Seats in the garden may be placed at a number of good positions, but we usually find them in the shade where a pleasing view of the garden may be seen while one is resting. They are often designed with a shelter overhead, or built in a circular fashion about some old tree.

Today it is not a difficult matter to purchase almost any type and design of garden seat from concerns that make a specialty of such work.

SUMMER HOUSES

Summer houses range in type from the simple shelter hut of the cottage garden to the classic garden temple. One may enjoy the

Fig. 102.—Three ways in which a pergola can be (as it always should be) made useful as well as ornamental. In the upper plan it connects the dwelling with another building; in the center plan it forms a background enclosing a portion of the garden; in the lower plan it is part of a rest-house or shelter

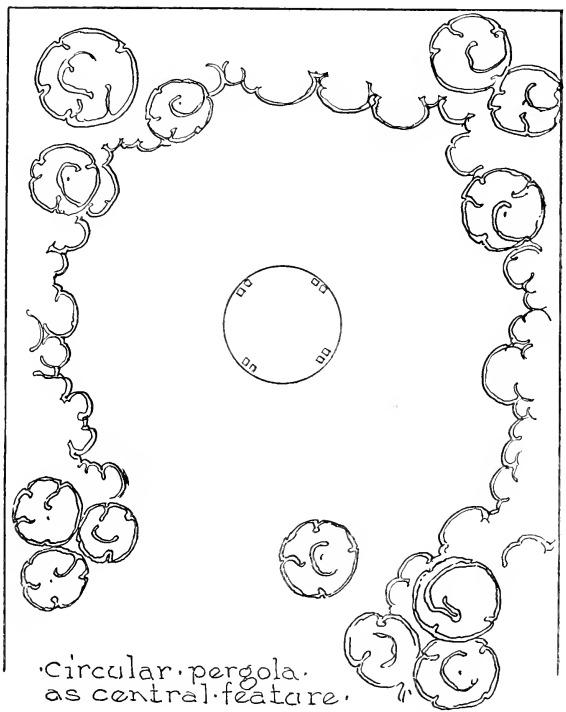


Fig. 103.—A circular pergola, though rather unusual, can be used as the central feature of a lawn or garden

garden doubly well if somewhere near is a shady seat beneath a vine-covered summer house where one may rest and drink in the atmosphere of repose and beauty of the garden. Almost all home grounds, either large or small, have a place of advantage for a summer house. If not in the garden proper it may be at some vantage point overlooking the garden. Such a structure should not be placed where there is no excuse for it, nor should it predominate in the landscape. Like other

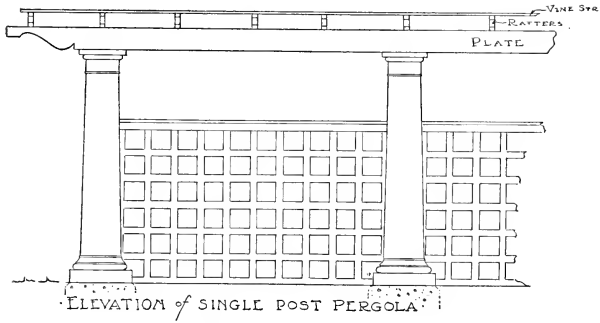


Fig. 104.—Elevation of a single-post pergola showing relation of trellis or screen to the surmounting details

garden accessories it should harmonize in design and construction with its surroundings. Associated with the ideal summer house are benches, tables and seats to make it comfortable and so that, if desired, afternoon teas may be served there. A summer house on a hillside or ledge overlooking the surrounding country may be found especially enjoyable (Figs. 100 and 101).

If made of wood it should be of some sort that will last, such as Red Cedar, Locust, Larch or Cypress. When Cedar logs are used to construct a house of rustic design, treat them with kerosene to preserve the bark and protect it against the ravages of boring insects.

If the garden adjoins the residence and a summer house is built as a feature therein, it should conform to the architecture of the house. If the garden house has but one open side it should face the south and have a pleasant outlook in that direction. The floor may consist of tile, brick, slate or flagstone and be constructed in the same manner as a walk of the same material. If the summer house is used as a place to serve tea or other refreshments, it should have a tight roof, as leaves, twigs, etc., from overhanging trees will fall through an open superstructure.

THE PERGOLA

Originally, the pergola was used only to span a walk extending between two points, but now we find it employed as a shelter, as a central motif, as a feature at the far end of formal gardens, etc. (Figs.

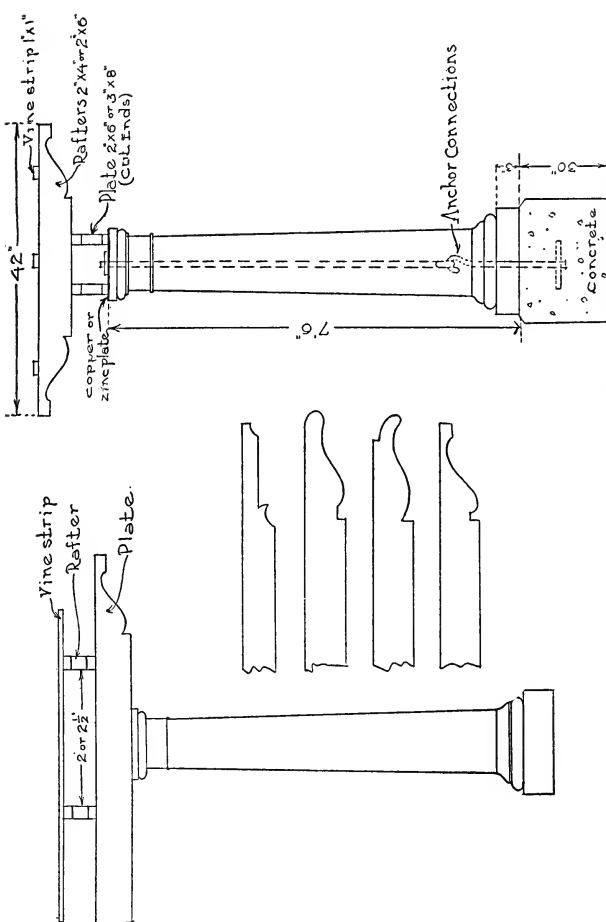


Fig. 105.—Construction details and dimensions for a single-post pergola, useful and attractive for screening out undesirable views

102 and 106). Porch pergolas are used over seats, doorways, and gateways. The single-post pergola (Figs. 104 and 105) is used in most cases for a screen effect, much as a hedge might be used, between the flower garden and kitchen garden (Fig. 106).

Pergolas may be made of a variety of materials and in numerous designs. The columns may be made of stone, brick, wood, or cobblestone and the whole designed either as a dignified piece of architecture which would fit well into a formal garden, or quite informally, as in the case of rustic work. The upright columns should be placed

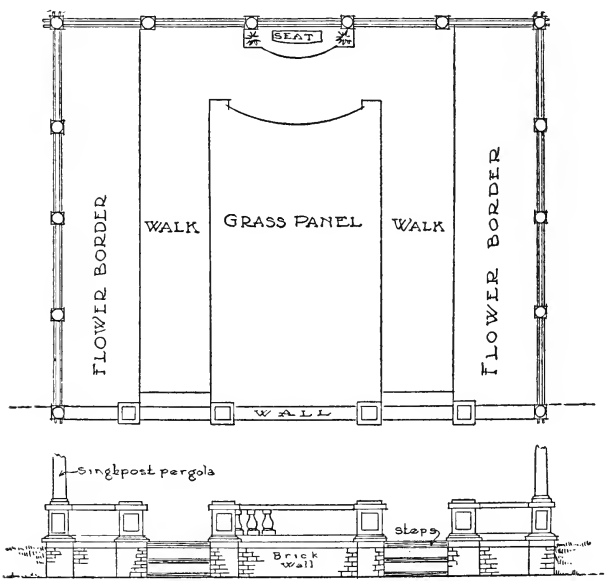


Fig. 106.—Plan and elevation showing how a single-post pergola can be used to enclose a garden, especially when used in connection with a brick wall or a sunken garden area

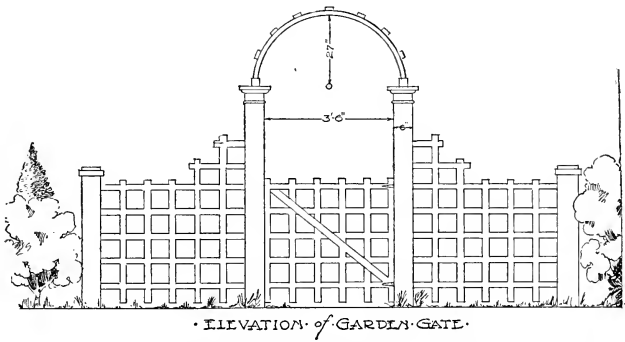


Fig. 107—Elevation for a simple but graceful garden gate surmounted by an arch over which vines may be allowed to grow. Compare Fig. 1

about eight feet apart, both lengthwise and transversely, and should be between eight and nine feet high over all. If the structure spans a grass walk, it is important that vines should not be grown so close together as to cast a dense shade, for this would injure the grass. In such a case, place the rafters about four feet apart. The more formal and dignified pergolas have wooden columns, usually of Cypress and of classic design, which are given three or four coats of paint to prevent weathering. The columns must stand on a stone or concrete foundation (Fig. 105).

In constructing a rustic pergola, Red Cedar or Locust is recommended, and all parts that come in contact with the ground should be treated with a preservative mixture such as creosote. This also applies to the intersection of posts and rafters where moisture is likely to collect.

Simple uprights or posts need not be as large as columns, but appear to best advantage when about eight inches in diameter at the ground.

Where a pergola is placed on a steep incline, the roof should be made in sections on several planes; if the slope is slight, only one plane is necessary.

If the pergola does not span a regular walk it is well to give it a floor of either brick, stepping stones, tile, or concrete, in which case the posts may rest on this flooring.

Rafters are usually placed about two feet apart and vine strips on top about a foot apart. White is the universal color for the pergola; it seems to bring out the color of vines and flowers by contrast.

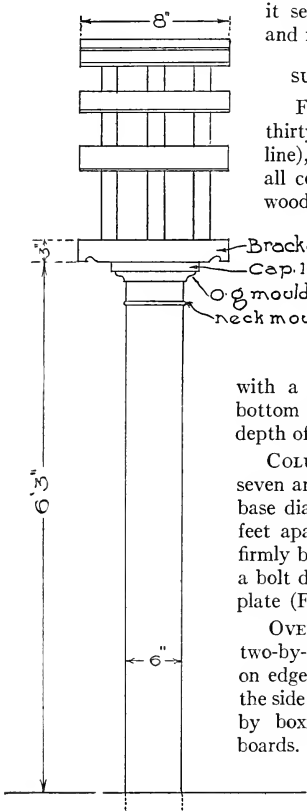


Fig. 108.—End elevation of arch shown in Fig. 108, to show construction and supply the names of important parts

SUGGESTED PERGOLA SPECIFICATIONS

FOUNDATION. Excavate twenty-four to thirty-six inches (or six inches below frost line), and over a sufficient area to allow all cement to extend one inch beyond the wood that it supports. Cover the bottom with six inches of cinders and pack firmly. Fill with a 1–2½–5 concrete mixture to the level of the ground. A one-half inch by 18 inch iron anchor rod with a one-half inch plate fastened to the bottom end is embedded in the concrete to a depth of six inches.

COLUMNS. These are best made of Cypress, seven and a half to eight feet in height with a base diameter of ten inches. Set them eight feet apart on centers. Each column is held firmly by an anchor rod fastened by means of a bolt drawn down on a one-quarter-inch top plate (Fig. 105).

OVERHEAD. The plate should be of two two-by-six or three-by-eight-inch timbers set on edge, the outside faces being aligned with the side of the columns. They may be closed by boxing top and bottom with one-inch boards. Plate and rafter ends are cut in same design. Rafters are made of two-by-four-inch pieces set on edge and fastened to the plate with angle irons.

FINISH. If the structure is to be stained, use a good preserv-

ative stain, followed by two coats of boiled linseed oil thinned with turpentine. If it is to be painted, use three coats of outside white, allowing twenty-four hours for drying between each two coats

Columns or uprights constructed of brick should have bases and caps of either cut stone or brick laid on their sides. There should be a quarter-inch projection at the bottom, but the caps should be flush with sides of columns at the top. Stucco columns may be built on tile; these have proved economical and substantial. They should be built on stone or concrete foundations projecting beyond the tile.

If the pergola is to have a floor, it should be constructed with the idea of permanency. The foundation for a tile, brick, or concrete floor should be at least six inches of cinders. On top of this is placed four inches of concrete (1–2½–5 mixture). For brick or tile floors, place on this a one-inch cushion of bar sand. If cement is used it is best to tint it by using either lamp black or red mortar stain applied to the finish coat. Cement paving should have expansion joints at frequent intervals to prevent cracking. A good looking cement floor is made in small squares to resemble tile.

ARCHES

The arch is used only to span a path. It may be made of wood or of iron, the latter being more durable, but not so pleasing until enveloped by vines. An arch without a vine lacks completeness. If the arch is intended to span a wide and much used path or walk, it should be made heavy and substantial looking. Arches that span narrow garden paths may be simple in design and construction (See Figs. 1, 107 and 108).

A SELECTED PLANT LIST FOR GENERAL USE

Any of the following plants will succeed under ordinary conditions, that is to say, in fairly good garden soil where it is not wet nor very dry, and in a location which gets a fair amount of sunlight. Many of the varieties mentioned in this list will also be found recommended elsewhere for planting under special conditions where they will succeed as well as for general purposes. The object of including them here is to give a wider choice to the fortunate planter who has no unusual conditions to contend with. This list will be found useful also for reference as to the size of plants at maturity.

LARGE TREES (75 to 150 feet)

DECIDUOUS

Common Name.	*Botanical Name*
Norway Maple,	Acer platanoides.
Purple-leaved Maple,	Acer platanoides Schwedleri.
Silver Maple,	Acer dasycarpum.
Red, Scarlet, or Swamp Maple,	Acer rubrum
Sugar Maple,	Acer saccharum.
Horse Chestnut (Buckeye),	Æsculus Hippocastanum.
Tree of Heaven,	Ailanthus glandulosa.
White Birch,	Betula alba.
Cherry Birch,	Betula lenta.
Yellow Birch,	Betula lutea.
Paper Birch,	Betula papyrifera.
Red Birch,	Betula rubra.
Chestnut, American,	Castanea americana.
Western Catalpa,	Catalpa speciosa.
Wild Black Cherry,	Cerasus serotina.
American Beech,	Fagus ferruginea.
European Beech,	Fagus sylvatica.
Purple-leaved Beech (Copper Beech),	Fagus sylvatica purpurea.
White Ash,	Fraxinus americana.
Honey Locust,	Gleditschia triacanthos.
Black Walnut,	Juglans nigra.
European Larch,	Larix europæa.
Tamarack,	Larix leptolepis.

Common Name	*Botanical Name*
Tulip Tree (Tulip Poplar),	Liriodendron tulipifera.
Chinese Cork Tree,	Phellodendron amurense.
Buttonwood (Sycamore, Oriental Plane),	Platanus orientalis.
Lombardy Poplar,	Populus nigra fastigiata.
White Oak,	Quercus alba.
Swamp White Oak,	Quercus bicolor.
Turkey Oak,	Quercus Cerris.
Scarlet Oak,	Quercus coccinea.
Mossy Cup Oak,	Quercus macrocarpa.
Pin Oak,	Quercus palustris.
Red Oak,	Quercus rubra.
Chestnut Oak,	Quercus Prinus.
Black Oak,	Quercus tinctoria.
Black Locust (Flowering Locust),	Robinia pseudacacia.
Maidenhair Tree (Gingko),	Gingko biloba.
Weeping Willow,	Salix babylonica.
White Willow,	Salix alba.
Thurlow's Willow,	Salix elegantissima.
Silver Linden,	Tilia tomentosa (argentea).
European Linden,	Tilia vulgaris.
American Elm (White Elm),	Ulmus americana.
Scotch Elm,	Ulmus scabra.
English Elm,	Ulmus campestris.

LARGE TREES (75 to 100 feet)

EVERGREEN

Common Name.	*Botanical Name.*
Balsam Fir,	Abies balsamea.
Nikko Fir,	Abies brachyphylla.
White Fir,	Abies concolor.
White Spruce,	Picea alba.
Norway Spruce,	Picea excelsa.
Black Spruce,	Picea nigra.
Eastern Spruce,	Picea orientalis.
Servian Spruce,	Picea Omorika.
Colorado Spruce,	Picea pungens.
Colorado Blue Spruce,	Picea pungens glauca.

Common Name	*Botanical Name*
Koster's Blue Spruce,	Picea pungens Kosteri.
Douglas Spruce,	Pseudotsuga Douglasii.
Austrian Pine,	Pinus austriaca.
Bull Pine,	Pinus ponderosa.
White Pine,	Pinus Strobus.
Scotch Pine,	Pinus sylvestris.
Red Pine,	Pinus resinosa.
Pitch Pine,	Pinus rigida.
Hemlock,	Tsuga canadensis.

Fig. 109.—Plan and dimensions of full-sized athletic field, including circular and straight-away running tracks and football field in the center

Medium Sized Trees (50 to 75 feet)

DECIDUOUS

Common Name	*Botanical Name*
Buckeye,	Æsculus glabra.
Alder,	Alnus glutinosa.
Cutleaf Weeping Birch,	Betula alba laciniata.
American Birch,	Betula populifolia.
Hornbeam,	Carpinus americana.
Indian Bean,	Catalpa bignonioides.
Kadsura Tree,	Cercidiphyllum japonicum.
Hackberry (Nettle Tree),	Celtis occidentalis.
Double White Flowering Cherry,	Cerasus avium plenum.
Japanese Flowering Cherry,	Cerasus sinensis rosea.
Yellow Wood,	Cladrastis tinctoria.
Weeping Beech,	Fagus sylvatica pendula.
Kentucky Coffee Tree,	Gymnocladus canadensis.
Varnish tree,	Kœlreuteria paniculata.
Sweet Gum,	Liquidambar stryaciflua.
Cucumber Tree,	Magnolia acuminata.
Umbrella Tree,	Magnolia tripetala.
Sour Gum,	Nyssa sylvatica.
Carolina Poplar,	Populus caroliniana.
Pyramidal Oak,	Quercus fastigiata.
Laurel-leaved Willow,	Salix pentandra.
Yellow Bark Willow,	Salix vitellina.
Sassafras,	Sassafras officinale.

Medium Sized Trees (20 to 40 feet)

EVERGREEN

Common Name	*Botanical Name*
Spanish Fir,	Abies Pinsapo.
Eastern Arborvitæ,	Biota orientalis.
American Holly,	Ilex opaca.
Chinese Juniper,	Juniperus chinensis.
Red Cedar,	Juniperus virginiana.
Blue Virginian Cedar,	Juniperus virginiana glauca.
Schott's Cedar,	Juniperus virginiana Schottii.
Swiss Stone Pine,	Pinus cembra.
Obtuse-leaved Cypress,	Retinispora obtusa.
Pea-fruited Cypress,	Retinispora pisifera.
Golden Pea-fruited Cypress,	Retinispora pisifera aurea.
Plumed Japan Cypress,	Retinispora plumosa.
Golden Japan Plumed Cypress,	Retinispora plumosa aurea.
Japanese Tree Yew,	Taxus cuspidata capitata.
American Arborvitæ,	Thuya occidentalis.
Pyramidal Arborvitæ,	Thuya pyramidalis.

Small Trees (15 to 30 feet)

DECIDUOUS

Common Name.	*Botanical Name.*
Tartarian Maple,	Acer tatarica.
European Cork Maple,	Acer campestre.
Box Elder,	Acer Negundo.
Mountain Maple,	Acer spicatum.
Japanese Maple,	Acer polymorphum.
Hercules' Club,	Aralia spinosa.
European Hornbeam,	Carpinus betulus.
Japanese Catalpa,	Catalpa Kaempferi.
Bird Cherry,	Cerasus Padus.
Red Bud (Judas Tree),	Cercis canadensis.
Japanese Dogwood,	Cornus Kousa.
White Dogwood,	Cornus florida.
Pink Dogwood,	Cornus florida rubra.
Scarlet Thorn,	Cratægus coccinea.
Washington Thorn,	Cratægus cordata.
English Hawthorn,	Cratægus Oxyacantha.
Cockspur Thorn,	Cratægus crus-galli.
Common Haw,	Cratægus mollis.
Orange Haw,	Cratægus punctata.
Fern-leaf Beech,	Fagus asplenifolium.
Flowering Ash,	Fraxinus Ornus.
Snowdrop Tree,	Halesia tetraptera.
Sweet Bay,	Magnolia glauca.
Soulange's Magnolia,	Magnolia Soulangeana.
Sorrel Tree,	Oxydendron arboreum.
Flowering Peach,	Prunus persica.
Purple-leaf Plum,	Prunus Pissardi.
Hop Tree,	Ptelea trifoliata.
Siberian Crab,	Pyrus baccata.
Scented Crab,	Pyrus coronarius.
Flowering Crab,	Pyrus floribunda.
Bechtel's Crab,	Pyrus ioensis Bechtelii.
Parkmann's Crab,	Pyrus Parkmannii.
Chinese Crab,	Pyrus spectabilis.
Smooth Sumach,	Rhus glabra.
Pussy Willow,	Salix discolor.
Rosemary Willow,	Salix rosmarinifolia.
Goat Willow,	Salix caprea.
Chinese Lilac,	Syringa pekinensis.
Japanese Tree Lilac,	Syringa japonica.
American Mountain Ash,	Sorbus americana.
European Mountain Ash,	Sorbus aucuparia.

Tall Shrubs (8 to 10 feet)

DECIDUOUS

Common Name	*Botanical Name*
False Indigo,	Amorpha fruticosa.
Barberry,	Berberis Gagnepainii.
Allspice (Sweet Shrub),	Calycanthus floridus.
Siberian Pea Tree,	Caragana arborescens.
Japanese Judas Tree,	Cercis japonica.
White Fringe,	Chionanthus virginicus.
Bladder Senna,	Colutea arborescens.
Red-twig Dogwood,	Cornus alba.
Alternate-leaved Dogwood,	Cornus alternifolia.
Cornelian Cherry,	Cornus mas.
Hazel,	Corylus Avellana.
Purple Hazel,	Corylus Avellana purpurea.
Rose Box,	Cotoneaster foveolata.
Rose Box,	Cotoneaster moupinensis.
Rose Box,	Cotoneaster hupehensis.

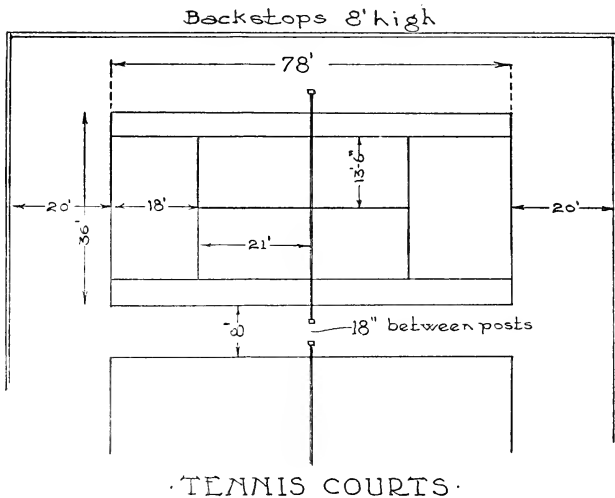


Fig. 110.—Dimensions for single and double tennis courts.

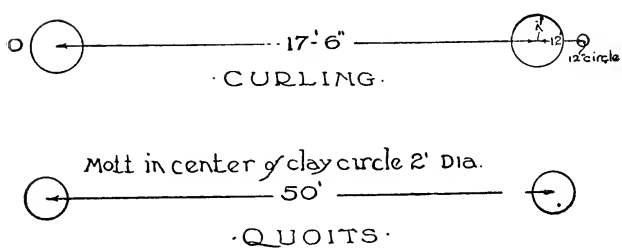


Fig. 111.—Dimensions and layout of playing space for curling and quoits

TALL SHRUBS—*continued*

Common Name	*Botanical Name*
White Deutzia,	Deutzia crenata.
Pink Deutzia,	Deutzia Pride of Rochester.
Waterer's Deutzia,	Deutzia Waterii.
Oleaster,	Elæagnus angustifolia.
Burning Bush,	Euonymus atropurpurea.
Spindle Tree,	Euonymus europæus.
Pearl Bush,	Exochorda grandiflora.
Golden Bell,	Forsythia intermedia.
Witch Hazel,	Hamamelis virginica.
Rose of Sharon,	Hibiscus syriacus.
Sea Buckthorn,	Hippophæ rhamnoides.
Chinese Witch Hazel,	Hamamelis mollis.
Spice Bush,	Laurus Benzoin.
Amur River Privet,	Ligustrum amurensis.
Ibota Privet,	Ligustrum Ibota.
Common Privet,	Ligustrum vulgare.
Californian Privet,	Ligustrum ovalifolium.
Ruprecht's Honeysuckle,	Lonicera Ruprechtiana.
Tartarian Honeysuckle,	Lonicera tatarica.
Mock Orange,	Philadelphus coronarius.
Large-flowered Mock Orange,	Philadelphus coronarius grandiflorus.
Gordon's Mock Orange,	Philadelphus Gordonianus.
Dwarf Buckeye,	Pavia macrostachya.
Red Choke Berry,	Pyrus arbutifolia.
Prairie Rose,	Rosa setigera.
Cathay Rose,	Rosa multiflora cathayensis.
Smoke Bush (Purple Fringe),	Rhus cotinus.
Stag's Horn Sumach,	Rhus typhina.
Common Elder,	Sambucus canadensis.
Golden Elder,	Sambucus canadensis aurea
Aitchinson's Spiræa,	Spiræa Aitchinsonii.
Lindley's Spiræa,	Spiræa Lindleyana.
Pink Spiræa,	Spiræa Billardii.
Ninebark,	Spiræa opulifolia.
Golden Ninebark,	Spiræa opulifolia aurea
Bladder Nut,	Staphylea colchica.
Japanese Storax,	Styrax japonica.
Hungarian Lilac,	Syringa Josikæa.
Rouen Lilac,	Syringa rothomagensis.
Persian Lilac,	Syringa persica.
Late-flowering Lilac,	Syringa villosa.
Common Lilac,	Syringa vulgaris.
Russian Lilac,	Syringa Wolfii.
Tamarisk,	Tamarix africana.
French Tamarisk,	Tamarix gallica.
Tamarisk,	Tamarix odessana.
Arrow Wood,	Viburnum dentatum.
Wayfaring Tree,	Viburnum lantana.
Sheepberry,	Viburnum lentago.
High-bush Cranberry,	Viburnum Opulus.
Guelder Rose,	Viburnum Opulus sterile.
Black Haw,	Viburnum prunifolium.
Weigela,	Weigela rosea.
Many-flowered Weigela,	Weigela floribunda.
Yellow Weigela,	Weigela lutea.
Red Weigela,	Weigela Abel Carriere.

TALL SHRUBS (8 to 10 feet)

EVERGREENS

Common Name	*Botanical Name.*
Japanese Holly,	Ilex crenata.
Common Juniper,	Juniperus communis.
Irish Juniper,	Juniper hibernica.
Thread-branched Cypress,	Retinispora filifera.
Golden Thread-branched Cypress,	Retinispora filifera aurea.
Veitch's Japanese Cypress,	Retinispora squarrosa Veitchii.
Great Laurel,	Rhododendron maximum.
Tree Box,	Buxus arborescens.
Hybrid Rhododendron,	Rhododendron album elegans.
Sitka Spruce,	Thuya Standishii.
Golden Arborvitæ,	Thuya occidentalis lutea.
Siberian Arborvitæ,	Thuya sibirica.

MEDIUM SHRUBS (5 to 8 feet)

DECIDUOUS

Common Name	*Botanical Name*
June Berry,	Amelanchier Botryapium,
White Azalea,	Azalea arborescens.
Great Flame Azalea,	Azalea calendulacea.
Pinxter Flower,	Azalea Vaseyi.
Clammy Azalea,	Azalea viscosa.
Rose Box,	Cotoneaster divaricata.
Rose Box,	Cotoneaster Franchetii.
Rose Box,	Cotoneaster Dielsiana.
Corylopsis,	Corylopsis spicata.
Variegated Dogwood,	Cornus alba variegata.
Silky Cornel,	Cornus sericea.
European Osier,	Cornus sanguinea.
Common Red Osier,	Cornus stolonifera.
Japanese Quince,	Cydonia japonica.
Lemone's Deutzia,	Deutzia Lemoinei.
Rough-leaved Deutzia,	Deutzia scabra.
Leatherwood,	Dirca palustris.
Enkianthus,	Enkianthus campanulatus.
Enkianthus,	Enkianthus japonica.
Japanese Oleaster,	Elæagnus longipes.
Cork Bark,	Euonymus alatus.
Strawberry Bush,	Euonymus americana.
Fortune's Golden Bell,	Forsythia Fortunei.
Green-bark Golden Bell,	Forsythia viridissima
Drooping Golden Bell,	Forsythia suspensa.
Japanese Witch Hazel,	Hamamelis japonica.
Native Hydrangea,	Hydrangea arborescens.
Single Hydrangea,	Hydrangea paniculata.
Double Hydrangea,	Hydrangea paniculata grandiflora.
Winter Berry,	Ilex verticillata.
Virginian Willow,	Itea virginica.
Fragrant Bush Honeysuckle,	Lonicera fragrantissima.
Maack's Honeysuckle,	Lonicera Maackii.
Morrow's Honeysuckle,	Lonicera Morrowii.
Fly Honeysuckle,	Lonicera Xylosteum.
Standish's Honeysuckle,	Lonicera Standishii.
Starry Magnolia,	Magnolia stellata.
Scentless Mock Orange,	Philadelphus inodoru

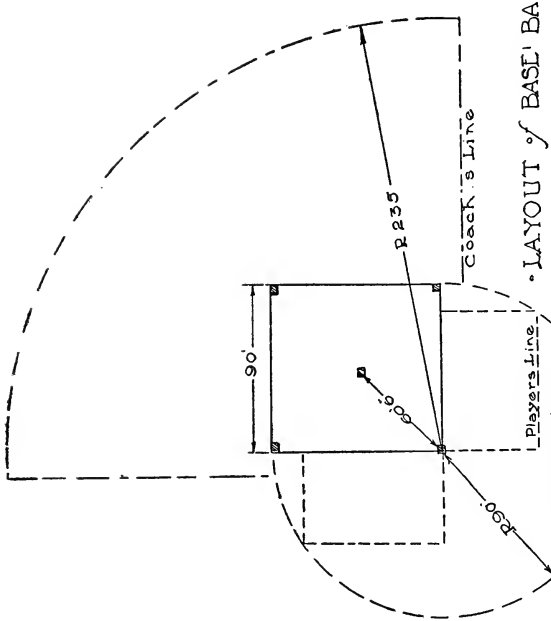


Fig. 112.—Plan and dimensions for full-sized baseball diamond

MEDIUM SHRUBS—*continued*

Common Name	*Botanical Name*
Double-flowering Almond,	Prunus amygdalus.
Double-flowering Plum,	Prunus triloba.
Black Choke Berry,	Pyrus nigra.
White Scotch Rose,	Rosa spinosissima altaica.
Father Hugo's Rose,	Rosa hugonis.
Buckthorn,	Rhamnus cathartica.
Fragrant Sumach,	Rhus aromatica.
Cut-leaved Elder,	Sambucus nigra laciniata.
Red-fruited Elder,	Sambucus racemosa.
Fine-leaved Spiræa,	Spiræa arguta.
Reeve's Spiræa,	Spiræa Reevesiana.
Ash-leaved Spiræa,	Spiræa sorbifolia.
Vanhouttei's Spiræa,	Spiræa Vanhouttei.
Withe Rod,	Viburnum cassinoides.
Japanese Cranberry,	Viburnum dilatatum.
Japanese Snowball,	Viburnum plicatum.
Wright's Viburnum,	Viburnum Wrightii.
White Weigela,	Weigela amabilis.
Vanhoutt's Weigela,	Weigela Vanhouttei.
Silvery Weigela,	Weigela hortensis.

True Bridal Wreath, Spiræa prunifolia, fl. pl.

MEDIUM SHRUBS (5 to 8 feet)

EVERGREENS

Boxwood, Buxus sempervirens.
Large-leaved Box, Buxus Handsworthi.
Fire Thorn, Cratægus pyracantha.
Grecian Juniper, Juniperus excelsa stricta.
Mountain Laurel, Kalmia latifolia.
Dwarf White Pine, Pinus strobus brevifolia.
Mountain Pine, Pinus montana.
Graceful Japanese Cypress, Retinispora obtusa gracilis.
Oregon Grape, Mahonia japonica.
Gregory's Spruce, Picea Gregoriana.
Japanese Table Pine, Pinus densiflora umbraculifera.
Rosenthal's Arborvitæ, Thuya Rosenthalii.
Japanese Bush Yew, Taxus cuspidata.
Graceful Hemlock, Tsuga canadensis gracilis.
Dwarf Hemlock, Tsuga canadensis minima.
Short-leaved Hemlock, Tsuga diversifolia.
Great Laurel, Rhododendron catawbiense.
Hybrid Rhododendrons, Rhododendron catawbiense, Vars. Chas. Bagley, Chas. Dickens, Delicatissima, Giganteum, C. S. Sargent, Smirnovi, Schlippenbachii, H. W. Sargent, atrosanguineum

SMALL SHRUBS (3 to 5 feet)

DECIDUOUS

Lead Plant, Amorpha canescens.
Butterfly Bush, Buddleia Veitchii.
Japanese Barberry, Berberis Thunbergii.
Chinese Barberry, Berberis diaphana.
Beauty Fruit, Callicarpa purpurea.
Fontanesia, Fontanesia Fortunei.
New Jersey Tea, Ceanothus americanus.
Sweet Pepper Bush, Clethra alnifolia.
Oak-leaved Hydrangea, Hydrangea quercifolia.
Shrubby St. John's Wort, Hypericum aureum, Hypericum prolificum.
Yellow Globe Flower, Kerria japonica.
Variegated Globe Flower, Kerria japonica variegata.
Regel's Privet, Ligustrum Regelianum.
Bayberry, Myrica cerifera.
Pea Bush, Lespedeza Sieboldii, Lespedeza japonica.
Golden Mock Orange, Philadelphus coronarius aureus.
Lemoine's Mock Orange, Philadelphus Lemoinei.
Beach Plum, Prunus maritima.
White Globe Flower, Rhodotypos kerrioides.
Japanese Rose, Rosa rugosa.
Shining Sumach, Rhus copallina.
Golden Currant, Ribes aureum.
Red Currant, Ribes sanguineum.
Thunberg's Spiræa, Spiræa Thunbergii.
Snowberry, Symphoricarpos racemosa.
Coral Berry, Symphoricarpos vulgare.
Lace Bush, Stephanandra flexuosa.
Maple-leaved Viburnum, Viburnum acerifolium.
Scented Guelder Rose, Viburnum Carlesii.
Weigela, Weigela Eva Rathke.
Florida Weigela, Weigela florida.

SMALL SHRUBS (3 to 5 feet)

EVERGREENS

Golden Chinese Arborvitæ, Biota orientalis aurea.
Savin Juniper, Juniperus Sabina
Japanese Juniper, Juniperus japonica.
Pfitzer's Juniper, Juniper chinensis Pfitzeriana
Tripartite Juniper, Juniperus tripartita.
Dwarf Mountain Pine, Pinus montana Mughus
Crip's Golden Cypress, Retinospora obtusa Crippsii.
Short-leaved Japanese Yew, Taxus cuspidata brevifolia.
Compact Golden Yew, Taxus tardiva aurea.
Heath-leaved Arborvitæ, Thuya occidentalis ericoides.
Hovey's Arborvitæ, Thuya occidentalis Hoveyi.
Globe Arborvitæ, Thuya occidentalis globosa.
Ellwanger's Arborvitæ, Thuya Ellwangeriana

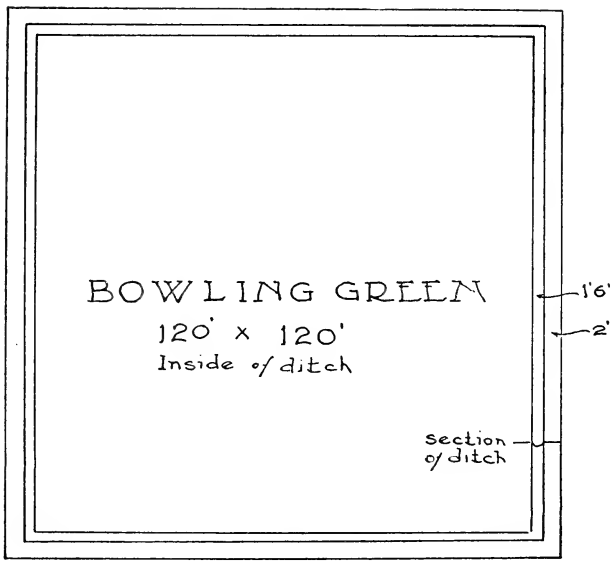


Fig. 113.—Shape and size of area required for the game of lawn bowls

SMALL SHRUBS (EVERGREENS)—*continued*

Common Name *Botanical Name*

Sargent's Weeping Hemlock, Tsuga Sargentii pendula.
Drooping Andromeda, Andromeda Cateshæi.
Flowering Andromeda, Andromeda floribunda.
Japanese Andromeda, Andromeda japonica.
Japanese Azalea, Azalea amœna.
Japanese Azalea, Azalea Hinodigiri.
Box-leaved Rose Box, Cotoneaster buxifolia.
Inkberry, Ilex glabra.
Holly-leaved Mahonia, Mahonia aquifolia.
Dotted Rhododendron, Rhododendron punctatum.
Carolina Rhododendron, Rhodendron carolinaiana.
Hybrid Rhododendrons, Rhodendron catawbiense album; Vars. Caractacus, E. S. Rand, Everestianum, Henrietta Sargent, Ignatius Sargent, F. D. Godman, H. H. Hunnewell, Lady Armstrong, Lady Grey Egerton, Mrs. C. S. Sargent, Lee's Dark Purple, Roseum elegans.

DWARF SHRUBS (Up to 3 feet)

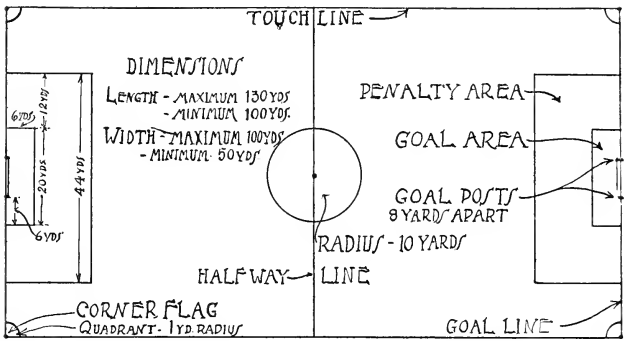
DECIDUOUS

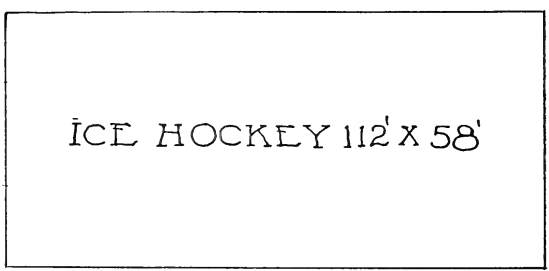
Zenobia, Andromeda speciosa.
Ghent Azalea, Azalea pontica.
Holland Azalea, Azalea mollis.
Blue Spiræa, Caryopteris mastacantha.
Sweet Fern, Comptonia asplenifolium.
Garland Flower, Daphne Mezereum.
Dwarf Deutzia, Deutzia gracilis..
Aaron's Beard, Hypericum calycinum.
Aaron's Beard, Hypericum Moserianum.
Shrubby St. John's Wort, Hypericum Kalmianum.
Shrubby Cinquefoil, Potentilla fruticosa.
Waterer's Spiræa, Spiræa Anthony Waterer.
Fortune's Spiræa, Spiræa callosa.
Fortune's White Spiræa, Spiræa callosa alba.
Dwarf Bush Cranberry, Virburnum Opulus nanum.
Korean Rose, Rosa Jackii.
Dwarf Mock Orange, Philadelphus microphylla.
Yellow Root, Xanthorrhiza apiifolia.
Prickly Ash, Zanthoxylon americanum.

DWARF SHRUBS (Up to 3 feet)

EVERGREEN

Compact Chinese Arborvitæ, Biota orientalis compacta.
Golden Chinese Arborvitæ, Biota orientalis compacta aurea.
Canadian Juniper, Juniperus canadensis.
Golden Canadian Juniper, Juniperus canadensis aurea.
Trailing Canadian Juniper, Juniperus canadensis depressa.
Scaly-leaved Juniper, Juniperus squamata.
Prostrate Juniper, Juniperus Sabina prostrata.
Chinese Trailing Juniper, Juniperus chinensis procumbens.
Gray Carpet Juniper, Juniperus Sabina tamariscifolia.
Globe Juniper, Juniperus virginiana globosa.
Maxwell's Spruce, Picea excelsa Maxwellii.
Pigmy Spruce, Picea excelsa pygmea.
Dwarf Spruce, Picea excelsa nana.
Dwarf Spruce, Picea excelsa Clanbrasiliana.
Dwarf Eastern Spruce, Picea orientalis compactum.
Compact Japanese Cypress, Retinispora obtusa compactum.
Spreading English Yew, Taxus repandens.
Canadian Yew, Taxus canadensis.
Compact Arborvitæ, Thuya occidentalis compactum.
Tom Thumb Arborvitæ, Thuya occidentalis Tom Thumb.
Little Gem Arborvitæ, Thuya occidentalis Little Gem.
Dwarf Box, Buxus suffruticosa.
Prostrate Rose Box, Cotoneaster horizontalis.
Prostrate Rose Box, Cotoneaster horizontalis perpusilla.
Garland Flower, Daphne Cneorum.
Garland Flower, Daphne Genkwa.
Pachystima, Pachystima Canbyi.
Japanese Spurge, Pacysandra terminalis.
Chinese Barberry, Berberis verruculosa.
Bearberry, Arctostaphylos Uva-ursi.
Sand Myrtle, Dendrium buxifolium.
Scotch Heather, Erica vulgaris.
Heath, Erica carnea.
Wintergreen, Gaultheria procumbens.
Periwinkle, Vinca minor.
Wilson's Rhododendron, Rhododendron Wilsonianum.
Rusty Rhododendron, Rhodendron ferrugineum
Myrtle-leaved Rhododendron, Rhododendron myrtifolium.
Rhododendron hybrids, Rhododendron Boule de Niege, Mont Blanc, Kissena, Blandianum, Glennyanum.





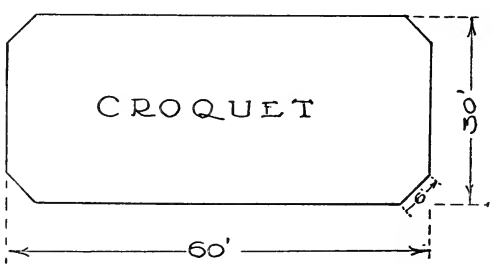


Fig. 114.—Size and shape of playing grounds for soccer football, ice hockey and croquet, respectively

PLANTS FOR SHADED SITUATIONS

Many of the plants named in the following list are found growing vigorously in the open sunlight, but they are included here because it has been proved that they also succeed in the shade. In such locations, the soil may be wet or it may be quite dry; accordingly it will be advisable to refer to the lists of plants recommended for various soil conditions. By cross reference to those lists and the one immediately following, a selection can be made that will succeed in the shade, in any particular soil condition. The foregoing list "for general use" provides a more detailed guide to approximate sizes.

Tall Shrubs and Small Trees

DECIDUOUS

Japanese Maple, Acer polymorphum.
June Berry, Amelanchier canadensis.
Tree Azalea, Azalea arborescens.
Hornbeam (European), Carpinus Betulus.
Red Bud (Judas Tree), Cercis canadensis.
White Fringe, Chionanthus virginica.
Alternate-leaved Dogwood, Cornus alternifolia.
White Dogwood, Cornus florida.
Pink Dogwood, Cornus florida rubra.
Cornelian Cherry, Cornus mascula.
Witch Hazel, Hamamelis virginiana, and mollis.
Snowdrop Tree, Halesia tetraptera.
Common Privet, Ligustrum vulgare.
Spice Bush, Laurus Benzoin.
Tartarian Honeysuckle, Lonicera tatarica.
Sorrel Tree, Oxydendron arboreum.
Chokeberry, Pyrus arbutifolia.
Mock Orange (scentless), Philadelphus inodorus.
Arrowood, Viburnum dentatum.
Sheepberry, Viburnum lentago.

EVERGREEN

Tree Box, Buxus arborescens.
American Holly, Ilex opaca.
Japanese Holly, Ilex crenata.
Common Juniper, Juniperus communis.
Great Laurel, Rhododendron maximum.
Great Laurel, Rhododendron catawbiense.
Hybrid Rhododendron, Rhododendron album elegans.
Hemlock, Tsuga canadensis.
Siebold's Hemlock, Tsuga Sieboldii.

Smaller Shrubs

DECIDUOUS

Ghent Azalea, Azalea pontica.
Holland Azalea, Azalea mollis.
Five-leaved Angelica, Aralia pentaphylla.
Clammy Azalea, Azalea viscosa.
Pinxter Flower (Wood Honeysuckle), Azalea Vaseyi.
Naked Azalea, Azalea nudiflora.
Corylopsis, Corylopsis spicata.
Silky Cornel, Cornus sericea.
Button Bush, Cephalanthus occidentalis.
New Jersey Tea, Ceanothus americanus.
Sweet Fern, Comptonia asplenifolum.
Sweet Shrub, Calycanthus floridus.
Sweet Pepper Bush, Clethra alnifolia.
Shrubby St. John's Wort, Hypericum aureum.
Regel's Privet, Ligustrum Ibota Regelianum.
Morrow's Honeysuckle, Lonicera Morrowii.
Fragrant Bush Honeysuckle, Lonicera fragantissima.
Bayberry, Myrica cerifera.
White Globe Flower, Rhodotypos kerrioides.
Flowering Raspberry, Rubus odoratus.
Snowberry, Symphoricarpos racemosa.
Coral Berry, Symphoricarpos vulgare.
Black Haw, Viburnum prunifolium.
Maple-leaved Viburnum (Hardhack), Viburnum acerifolium.
Prickly Ash, Zanthoxylon americanum.
Native Hydrangea, Hydrangea arborescens.

EVERGREEN

Drooping Andromeda, Andromeda Catesbæi.
Flowering Andromeda, Andromeda floribunda.
Japanese Andromeda, Andromeda japonica.
Evergreen Azalea, Azalea amœna.
Japanese Azalea, Azalea Hinodigiri.
Boxwood, Buxus sempervirens.
Heather, Erica vulgaris.
Inkberry, Ilex glabra.
Canadian Juniper, Juniperus canadensis.
Mountain Laurel, Kalmia latifolia.
Holly-leaved Mahonia, Mahonia aquifolium.
Dotted Rhododendron, Rhododendron punctatum.
Carolina Rhododendron, Rhododendron carolinianum.
Hybrid Rhododendrons, Rhododendron catawbiense varieties.
Japanese Yew, Taxus cuspidata.
Short-leaved Japanese Yew, Taxus cuspidata brevifolia.
Canadian Yew, Taxus canadensis.
Sargent's Hemlock, Tsuga Sargentii pendula.
Japanese Spurge, Pachysandra terminalis.

Herbaceous Perennials

Actæ, Actæ alba.
Monkshood, Aconitum (all species).
Wild Columbine, Aquilegia canadensis.
Bugle, Ajuba reptans.
Herb Spiræa, Astilbe (all species).
Windflower (Anemone), Anemone patens.
Windflower (Anemone), Anemone pennsylvanicum.
Windflower (Anemone), Anemone ranuculoides.
Short's Aster, Aster Shortii.
Bletia, Bletia hyacinthina.
Wood Fern, Asplenium (all species).
Spring Beauty, Claytonia virginica.
Lily of the Valley, Convallaria majalis.
Large-leaved Campanula, Campanula latifolia macrantha.
Lady Slipper, Cypripedium acaule.
Silky Lady Slipper, Cypripedium pubescens.
Pink Lady Slipper, Cypripedium spectabile.
Marsh Marigold, Caltha palustris.
Foxglove, Digitalis (all species).
Bleeding Heart, Dicentra spectabilis.
Bleeding Heart, Dicentra eximia.
Erythronium, Erythronium americanum
Plantain Lily, Funkia (all species).
Gentian, Gentiana Andrewsii.
Rough Gentian, Gentiana scabra.
Christmas Rose, Helleborus niger.
Liver Leaf, Hepatica triloba.
Wood Fern, Lastrea.
Cardinal Flower, Lobelia cardinalis.
Great Lobelia, Lobelia syphilitica.
Canadian Lily, Lilium canadensis.
Loosestrife, Lysimachia (all species).
Rose Loosestrife, Lythrum (all species).
London Pride, Lychnis chalcedonica.
Rose Campion, Lychnis coronaria.
Forget-Me-Not, Myosotis palustris.
Wood Fern, Osmunda.
Jacob's Ladder, Polemonium (all species).
Solomon's Seal, Polygonatum giganteum.
Fern, Polystichum.
Balloon Flower, Platycodon grandiflora.
Primrose, Primula (all species).
Lungwort, Pulmonaria (all species).
Shortia, Shortia galacifolia.
Indian Pink, Spigelia marilandica.
Goat's Beard, Spiræa (all species).
Blood Root, Sanguinaria canadensis.
Bouncing Bet, Saponaria officinalis.
Fern, Scolopendrium.
Spiderwort, Tradescantia virginica.
Wake Robin, Trillium (all species).
Periwinkle, Vinca minor.
Tufted Pansy, Viola cornuta.
Speedwell, Veronica spicata.
Virginian Speedwell, Veronica virginiana.

PLANTS FOR DRY SOILS

It is not to be presumed that the following plants, because they are recommended for dry soils, will thrive better in extremely dry places than under more satisfactory conditions. These plants, like all others, need moisture; but being deep rooting, they can withstand considerable drought. It is therefore most advisable, and indeed necessary, to supply fairly good soil at the time of transplanting, and to give some attention in the way of watering them until they are firmly established.

Trees

DECIDUOUS

Tree of Heaven, Ailanthus glandulosus.
Box Elder, Acer Negundo.
Gray Birch, Betula populifolia.
Hackberry, Celtis occidentalis.
Wild Cherry, Cerasus serotina.
Honey Locust, Gleditschia triacanthos.
Red Oak, Quercus rubra.
Scarlet Oak, Quercus coccinea.

EVERGREEN

Red Cedar, Juniperus virginiana.
Black Spruce, Picea nigra.
Red Pine, Pinus resinosa.
Pitch Pine, Pinus rigida.
Jack Pine, Pinus Banksiana.
Scrub Pine, Pinus inops.
Jersey Pine, Pinus virginiana.
White Pine, Pinus Strobus.

Black Locust, Robinia pseudacacia.

Shrubs

DECIDUOUS

Five-leaved Angelica, Aralia pentaphylla.
New Jersey Tea, Ceanothus americanus.
Sweet Fern, Comptonia asplenifolium.
Panicled Dogwood, Cornus paniculata.
Sand Cherry, Cerasus pumila.
Western Sand Cherry, Cerasus pumila Besseyi
Bladder Senna, Colutea arborescens.
St. John's Wort, Hypericum prolificum.
St. John's Wort, Hypericum Kalmianum.
Sea Buckthorn, Hippophæ rhamnoides.
Huckleberry, Vaccinium corymbosum.
Bay Berry, Myrica cerifera.
Bush Clover, Lespedeza bicolor.
Bush Clover, Lespedeza Sieboldii.
Beach Plum, Prunus maritima.
Scrub Oak, Quercus illicifolia.
Prairie Rose, Rosa setigera.
Staghorn Sumach, Rhus typhina.
Fragrant Sumach, Rhus aromatica.
Buckthorn, Rhamnus cathartica.
Mountain Currant, Ribes aureum.
Dwarf Willow, Salix tristis.
Prairie Willow, Salix humilis.
Snowberry, Symphoricarpos racemosus.
Coral Berry, Symphoricarpos vulgare.
Wayfaring Tree, Viburnum lantana.

EVERGREEN

Bearberry, Arctostaphylos Urva-ursi.
Holly-leaved Mahonia, Mahonia aquifolia.
Savin Juniper, Juniperus Sabina.
Prostrate Juniper, Juniperus Sabina prostrata.
Common Juniper, Juniperus communis.
Japanese Spurge, Pachysandra terminalis.
Mountain Pine, Pinus montana.
Dwarf Mountain Pine, P. montana Mughus.
Chinese Trailing Juniper, Juniperus chinensis procumbens.

Herbaceous Perennials

SUNNY PLACES

Butterfly Weed, Asclepias tuberosa.
Sand Milkweed, Asclepias amplexicaule.
Sea Thrift, Armeria maritima.
Old Woman, Artemesia abrotanum.
Chamomile, Anthemis tinctoria.
Yarrow (Wooly), Achillea tomentosa.
Yarrow, Achillea Ptarmica, The Pearl.
Indigo, Baptisia australis.
Indigo, Baptisia tinctoria.
Wild Senna, Cassia marilandica.
Snow-in-Summer, Cerastium tomentosum.
Everblooming Spurge, Euphorbia myrsinites.
Flowering Spurge, Euphorbia corollata.
Horse Weed, Erigeron canadensis.
Blue Fleabane, Erigeron acris.
Blue Fescue, Festuca glauca.
Blue Bells, Campanula rotundifolia.
Baby's breath, Gypsophila paniculata.
Sunflower, Heliantlius (in variety).
Wild Lupine, Lupinus perennis.
Lavender, Lavendula vera.
Variegated Nettle, Lanum album.
Ragged Robin, Lychnis coronaria.
Prickly Pear, Opuntia (all species).
Evening Primrose, Œnothera Youngii.
Moss Pink, Phlox subulata.
Moss Pink, Phlox amœna.
Blazing Star, Liatris scariosa.
Kansas Gay Feather, Liatris pycnostachya
Beard's Tongue, Pentstemon barbatus.
House Leek, Sempervivum (all species).
Stonecrop, Sedum.
Bouncing Bet, Saponaria officinalis.
Meadow Sweet, Spiræa filipendula.
Sweet William, Dianthus barbatus.

IN SHADE

Bugle, Ajuga genevensis.
Columbine, Aquilegia canadensis.
Windflower, Anemone pennsylvanica.
Alpine Aster, Aster alpinus.
Yellow Columbine, Aquilegia chrysantha.
Coral Bells, Heuchera sanguinea.
Candytuft, Iberis sempervirens.
Blazing Star, Liatris elegans.
Sensitive Fern, Onoclea sensibilis.
Ebony Spleenwort, Asplenium ebeneum.
Polypody Fern, Polypodium vulgare.
Balloon Flower, Platycodon grandiflorum.
Goldenglow, Rudbeckia triloba.
Goat's Beard, Spiræa aruncus.
Stone Crop, Sedum spectabile.
Betony, Stachys betonica.
Easter Bells, Stellaria Holostea.
Goldenrod, Solidago speciosa.

PLANTS FOR WET OR MARSHY PLACES

In the following list are found those trees and plants which prefer low, wet places, like those in which they are found growing in their natural habitats. If planted in high, dry places they will not thrive.

TREES

DECIDUOUS

Swamp Maple, Acer rubrum.
Speckled Alder, Alnus incana.
River Birch, Betula nigra.
Sweet Gum, Liquidambar styraciflua.
Sour Gum, Nyssa sylvatica.
Sour Gum, Nyssa aquatica.
Larch, Larix leptolepis.
Swamp White Oak, Quercus bicolor.
Pin Oak, Quercus palustris.
Water Oak, Quercus aquatica.
Aspen, Populus tremuloides.
Weeping Willow, Salix babylonica.
Royal Willow, Salix regalis.
Pussy Willow, Salix discolor.
Goat Willow, Salix caprea.
White Willow, Salix alba.
American Elm, Ulmus americana.
Bald Cypress, Taxodium distichum.

EVERGREEN

Balsam Fir, Abies balsamea.
Austrian Pine, Pinus austriaca.
Arborvitæ, Thuya occidentalis.

SHRUBS

Clammy Azalea, Azalea viscosa.
Rhodora, Azalea canadensis.
Button Bush, Cephalanthus occidentalis.
Allspice, Calycanthus floridus.
Leatherleaf, Chamædaphne calyculata (evergreen.)
Red Osier, Cornus stolonifera.
Silky Cornel, Cornus sericea.
Sweet Pepper Bush, Clethra alnifolia.
Winterberry, Ilex verticillata.
Ink Berry, Ilex glabra. (evergreen)
Virginian Willow, Itea virginica.
Sheep Laurel, Kalmia angustifolia (evergreen).
Spice Bush, Laurus Benzoin.
Blue Honeysuckle, Lonicera cœrulea.
Sweet Gale, Myrica Gale.
Red Chokeberry, Pyrus arbutifolia.
Black Chokeberry, Pyrus nigra.
Swamp Rose, Rosa carolina.
Wild Black Currant, Ribes floridum.
Elderberry, Sambucus canadensis.
Hardhack, Spiræa tomentosum.
Queen-of-the-Meadow, Spiræa salicifolium.
Arrowwood, Viburnum dentatum.
Sheepberry, Viburnum lentago.
Withe Rod, Viburnum cassinoides.

HERBACEOUS PERENNIALS

Sweet Flag, Acorus calamus.
Swamp Milkweed, Asclepias incarnata.
Michælmas Daisy, Aster ordifolius.
New England Aster, Aster novæ-angliæ.
New England Aster, Aster umbellatus.
New England Aster, Aster puniceus.
False Chamomile, Boltonia latisquama.
Marsh Marigold, Caltha palustris.
Turtlehead, Chelone glabra.
Water Arum, Calla palustris.
Bunchberry, Cornus canadensis.
Blue Joint Grass, Calamagrostis canadensis.
Snakeroot, Cimicifuga racemosus.
Boneset, Eupatorium perfoliatum.
Joe Pye Weed, Eupatorium purpureum.
Gardener's Garter, Eulalia japonica (and varieties).
Marsh Mallow, Hibiscus Moscheutos.
Swamp Pink, Helonias bullata.
Sneeze Weed, Helenium autumnale.
Blue Flag, Iris versicolor.
Yellow Flag, Iris pseudacorus.
Siberian Flag, Iris sibirica.
Japanese Iris, Iris Kaempferi.
Cardinal Flower, Lobelia cardinalis.
Purple Loosestrife, Lythrum salicaria roseum.
Buckbean, Menyanthes trifoliatum.
Blue Buckbean, Menyanthes syphilitica.
Forget-Me-Not, Myosotis palustris.
Golden Club, Orontium aquaticum.
Royal Fern, Osmunda regalis.
False Dragon Head, Physostegia virginica.
Buttercup, Ranunculus septembrionalis.
Creeping Buttercup, Ranunculus repens.
Goldenrod, Solidago canadensis.
Evergreen Goldenrod, Solidago sempervirens.
Georgian Trumpet, Sarracena flava.
Pitcher Plant, Sarracena rubra.
Purple Pitcher Plant, Sarracena purpurea.
Cattails, Typha latifolia.
Narrow-leaf Cattail, Typha angustifolia.
False Hellebore, Veratrum viride.
Slender Flag, Iris prismatica.

PLANTS FOR THE SEASHORE (Exposed)

There is very little natural plant life along the sea front beyond, perhaps, a few beach grasses. Therefore it must not be expected that the trees and shrubs here recommended for such a location will flourish without any care. On the contrary, a good, large hole should be dug for each plant and good soil substituted for the sand. After being carefully and firmly planted, the trees must be protected for a season from the winds, and the soil soaked occasionally during the Summer. When once the plants are established, little trouble will be experienced in maintaining a good growth.

Trees

Deciduous

Wild Cherry, Cerasus serotina.
Honey Locust, Gleditschia triacanthos.
Beach Plum, Prunus maritima.
White Poplar, Populus alba.
Balsam Poplar, Populus balsamifera.
Button Wood, Platanus orientalis.
Scarlet Oak, Quercus coccinea.

Evergreen

American Holly, Ilex opaca.
Red Cedar, Juniperus virginiana.
Larch, Larix leptolepsis.
Colorado Spruce, Picea pungens.
Red Spruce, Picea rubra.
Pitch Pine, Pinus rigida.
Scotch Pine, Pinus sylvestris.
Austrian Pine, Pinus austriaca.
Jack Pine, Pinus Banksiana.

Shrubs

Groundsel Tree, Baccharis halimifolia.
Sand Cherry, Cerasus pumila.
Western Sand Cherry, Cerasus pumila Besseyi.
Sea Buckthorn, Hippophæ rhamnoides.
Double Hydrangea, Hydrangea paniculata grandiflora.
Common Privet, Ligustrum vulgare.
Bayberry, Myrica cerifera.
Sumach, Rhus typhina.
Japanese Rugosa, Rosa rugosa.
Wild Rose, Rosa lucida.
Prairie Rose, Rosa setigera.
Buffalo Berry, Shepherdia argentea.
Tamarisk, Tamarix africana.
Californian Privet, Ligustrum ovalifolium.

PLANTS FOR BINDING AND COVERING SOIL ON STEEP BANKS

When planting on a steep bank, the practical side of the operation, that of binding the soil to prevent washing, should be the chief aim. With this in mind the planting must be carefully done, substituting good soil where each shrub is placed, and leaving a considerable depression, so that at least some water will be caught for the benefit of the roots. Good results are attained by sowing seed of the following plants, as well as planting them; and the soil can be retained during the germination period by pegging wire fencing down over it. In any event close attention should be paid to the bank for the first year or two, and any damage caused by washing should be remedied immediately it is discovered.

Shrubs

Japanese Barberry, Berberis Thunbergii.
Five-leaved Angelica, Aralia pentaphylla.
Sweet Fern, Comptonia asplenifolia.
Bayberry, Myrica cerifera.
Tartarian Honeysuckle, Lonicera tatarica.
Smooth Sumach, Rhus glabra.
Staghorn Sumach, Rhus typhina.
Prairie Rose, Rosa setigera
Elderberry, Sambucus canadensis.
Hardhack, Spiræa tomentosa.
Purple Osier, Salix purpurea.
Snowberry, Symphoricarpos racemosus.
Coral Berry, Symphoricarpos vulgare.
Osage Orange, Toxylon pomiferum.
Yellow Root, Xanthoxylon americanum.
Japanese Rose, Rosa rugosa.
Fragrant Sumach, Rhus aromatica.

VINES

Bittersweet, Celastrus scandens.
Japanese Honeysuckle, Lonicera japonica.
Matrimony Vine, Lycium halimifolia.
Memorial Rose, Rosa Wichuraiana.
Wild Rose, Rosa lucida.
Wild Rose, Rosa nitida.
Chinese Matrimony Vine, Lycium chinense.

PLANTS FOR WINDBREAKS AND SCREENS

In order to break the sweep of high winds it is necessary to plant closely, and to use such trees and shrubs as leaf out early in Spring and retain their foliage until late Autumn. The individual value of any tree or shrub as a thing of beauty must not be considered, so that the various kinds used should be allowed to crowd each other with their branches intermingling. The trees will, of course, be the main factor in sheltering, but it will often be found necessary to clothe the base of trees with flowering shrubs. If the planting is to shelter a refined lawn area, a better class of shrubs can be used on the inside of the belt, which should be composed mainly of the following plants:

TREES

DECIDUOUS	EVERGREEN
Red Maple, Acer rubrum.	Red Cedar, Juniperus virginiana.
Sugar Maple, Acer saccharinum.	Norway Spruce, Picea excelsa.
Hornbeam, Carpinus caroliniana.	White Spruce, Picea alba.
American Beech, Fagus ferruginea.	White Pine, Pinus Strobus.
White Oak, Quercus alba.	Red Pine, Pinus resinosa.
Carolina Poplar, Populus caroliniana.	Pitch Pine, Pinus rigida.
Lombardy Poplar, Populus fastigiata.	Austrian Pine, Pinus austriaca.
While Willow, Salix alba.	Hemlock, Tsuga canadensis.

SHRUBS

Tartarian Maple, Acer tatarica.	Common Privet, Ligustrum vulgare.
Red-twigged Dogwood, Cornus alba.	Bush Honeysuckle, Lonicera tatarica.
Hazel, Corylus americana.	Bush Honeysuckle, Lonicera bella albida.
Russian Olive, Elæagnus angustifolia.	Bush Honeysuckle, Lonicera Maackii.
Golden Bell, Forsythia intermedia.	Buckthorn, Rhamnus cathartica.
Green-bark Golden Bell, Forsythia viridissima	Sheepberry, Viburnum lentago.
Ibota Privet, Ligustrum Ibota.	Arrowwood, Viburnum dentatum.

PLANTS FOR FORMAL HEDGES

All plants or trees selected for this purpose must, of necessity, be of a more or less twiggy nature with an abundance of branches, and also be amenable to close shearing. If the hedge is to be a barrier, the various thorny subjects will best answer the purpose, while for an ornamental hedge, the Beech, Hornbeam or any of the evergreens are more suitable. Whatever is used, the pruning should be severe for a year or so, in order to force a good growth from the ground up. The last shearing should be done not later than August or early September, so that there will be little or no young growth to withstand the following Winter. The distance of planting will depend upon the material used and the aim in view. It is, however, generally advisable to use smaller plants and set them close together, rather than to use larger plants at a greater distance. No matter what size is used, the plants should be allowed to touch, and if a broad hedge is desired, plant a double row, setting the plants in the second row alternately with those in the first.

TALL—DECIDUOUS

Hornbeam (European), Carpinus betulus.	Honey Locust, Gleditschia triacanthos.
Cockspur Thorn, Cratægus Crus-galli.	Black Thorn, Prunus spinosa.
English Hawthorn, Cratægus Oxyacantha.	Buckthorn, Rhamnus cathartica.
European Beech, Fagus sylvatica.	Osage Orange, Toxylon pomiferum.

TALL—EVERGREEN

Norway Spruce, Picea excelsa.
Arborvitæ, Thuya occidentalis.
Siberian Arborvitæ, Thuya sibirica.
Japanese Yew Tree, Taxus cuspidata capitata.
Hemlock, Tsuga canadensis.

LOW—DECIDUOUS

Japanese Barberry, Berberis Thunbergii.
Small-leaved Pea Tree, Caragana microphylla.
Japanese Quince, Cydonia japonica.
Regel's Privet, Ligustrum Regelianum.
Amoor River Privet, Ligustrum amurensis.
Californian Privet, Ligustrum ovalifolium.

LOW—EVERGREEN

Boxwood, Buxus sempervirens.
Firethorn, Cratægus pyracantha.
Japanese Holly, Ilex crenata.
Dwarf Arborvitæ, Thuya occidentalis compacta.
Rosenthal's Arborvitæ, Thuya occidentalis Rosenthalii.
Japanese Bush Yew, Taxus cuspidata.
Dwarf Hemlock, Tsuga canadensis gracilis.
Compact Hemlock, Tsuga canadensis compacta.
Short-leaved Hemlock, Tsuga diversifolia.

DWARF HEDGE PLANTS FOR EDGING

Sometimes it is desirable to emphasize a line or design, but at the same time not interfere with the general view over the lawn, as in the case of the old-fashioned Box-bordered walks. The plants used for this purpose must naturally be of a low, compact habit, with good foliage. The Privets are included because they can be continually clipped very severely without detriment to the appearance of the hedge when old; moreover this persistent pruning tends to stunt their natural vigorous growth, with the result that they finally keep within bounds. This also pertains to other plants that will be recognized as ordinarily larger bushes.

DECIDUOUS

Japanese Barberry, Berberis Thunbergii.
Box Barberry, Berberis buxifolia.
Dwarf Deutzia, Deutzia gracilis.
Fortune's Spiræa, Spiræa callosa.
Fortune's Spiræa, Spiræa callosa alba.
Waterer's Spiræa, Spiræa Anthony Waterer.
Amoor River Privet, Ligustrum amurensis.
Regel's Privet, Ligustrum Regelianum.
Dwarf Bush Cranberry, Viburnum Opulus nanum.

EVERGREEN

Evergreen Azalea, Azalea amœna.
Dwarf Boxwood, Buxus suffruticosa.
Dwarf Eastern Arborvitæ, Biota orientalis compacta nana.
Firethorn, Cratægus pyracantha.
Small-leaved Japanese Holly, Ilex crenata microphylla.
Dwarf Japanese Yew, Taxus cuspidata brevifolia.
Dwarf Golden Yew, Taxus tardiva aurea.
Dwarf Arborvitæ, Thuya occidentalis, Tom Thumb.
Dwarf Arborvitæ, Thuya occidentalis, Little Gem.
Compact Japanese Cypress, Retinispora obtusa compacta.

PLANTS FOR NATURAL OR INFORMAL HEDGES

Although no pruning (except the removal of dead and very old wood) will be found necessary on the shrubs, it is best to "top" (cut off the main stem of) the trees before they have reached the desired height. By so doing the side branches will be strengthened, and a hedge suitable for dividing large areas obtained. Being set more closely together than in the ordinary planting, the shrubs will need water more often than is generally realized, and the soil must not be heaped up at the base—rather let there be a slight depression in which the water will collect. The shrubs may be set about one and a half to three feet apart, and in the case of Lilacs a little more space will allow better development for flowering.

TALL—DECIDUOUS

Cockspur Thorn, Cratægus Crus-galli.
European Beech, Fagus sylvatica.
Honey Locust, Gleditschia triacanthos.
Tartarian Honeysuckle, Lonicera tatarica.
Lilac, Syringa vulgaris.
Buckthorn, Rhamnus cathartica.
Carolina Buckthorn, Rhamnus caroliniana.
Black Thorn, Prunus spinosa.

European Hornbeam, Carpinus betulus.
Wing Bark, Euonymus alatus.
Rose of Sharon, Hibiscus syriacus.
Mock Orange, Philadelphus coronarius.
Deutzia, Deutzia, Pride of Rochester.
Arrowwood, Viburnum dentatum.
Weigela, Weigela (in variety).

Tall—Evergreen

Plumed Cypress, Retinispora plumosa.
Pea-fruited Cypress, Retinispora pisifera.
Japanese Yew Tree, Taxus cuspidata capitata.
Arborvitæ, Thuya occidentalis.
Hemlock, Tsuga canadensis.

Low—Deciduous

Japanese Barberry, Berberis Thunbergii.
Japanese Quince, Cydonia japonica
Regel's Privet, Ligustrum Regelianum.
Japanese Rose, Rosa rugosa.
Vanhouttei's Spiræa, Spiræa Vanhouttei.
Bridal Wreath, Spiræa prunifolia fl. pl.
Lace Bush, Stephanandra flexuosa.
Snowberry, Symphoricarpos racemosus.
Coral Berry, Symphoricarpos vulgare.
Lemoine's Mock Orange, Philadelphus Lemoinei.
Waterer's Spiræa, Spiræa Anthony Waterer.
Dwarf Deutzia, Deutzia gracilis.

Low—Evergreen

Any of the plants named in the list for low, formal hedges (page 135) will make an excellent informal hedge if allowed to grow naturally, with just an occasional pruning.

PLANTS FOR SKY-LINE EFFECTS

Unless the "sky line" or contour of the shrubbery border is varied, the result is liable to be flat and uninteresting, especially when viewed from a little distance. Therefore, in addition to color and leaf form, the habits of plant material must be considered with a view to contrast or quiet harmony. For instance, the vertical branches of the Lombardy Poplar make a striking contrast to the horizontal growth of the Thorns. Between these two extremes there are many forms, offering a wide scope for various combinations.

Columnar or Pyramidal Trees

DECIDUOUS

Upright Sugar Maple, Acer saccharum monumentale.
Pyramidal White Birch, Betula alba fastigiata.
Upright Hornbeam, Carpinus betulus columnare.
Maiden Hair Tree (upright form), Ginkgo biloba fastigiata.
Lombardy Poplar, Populus nigra fastigiata.
Bolle's Poplar, Populus Bolleana.
Pyramidal Oak, Quercus fastigiata.
Bald Cypress, Taxodium distichum.
Wheatley's Elm, Ulmus scabra Wheatleyi.

EVERGREEN

Nikko Fir, Abies brachyphylla.
Red Cedar, Juniperus virginiana.
Upright Spruce, Picea excelsa pyramidalis.
Pyramidal Arborvitæ, Thuya occidentalis pyramidalis.
American Arborvitæ, Thuya occidentalis.
Eastern Arborvitæ, Biota orientalis.
Chinese Juniper, Juniperus chinensis.

Rugged or Picturesque Trees

DECIDUOUS

Black Oak, Quercus velutina.
Kentucky Coffee Tree, Gymnocladus canadensis.
Hickory, Carya ovata.
Cockspur Thorn, Cratægus Crus-galli.
Varnish Tree, Kœlreuteria paniculata.
Sassafras, Sassafras officinale.
Sour Gum, Nyssa sylvatica.
Black Walnut, Juglans nigra.

EVERGREEN

Scotch Pine, Pinus sylvestris.
Jack Pine, Pinus Banksiana.
Pitch Pine, Pinus rigida.
Jersey Pine, Pinus virginiana.
Bull Pine, Pinus ponderosa.

Pendulous or Weeping Trees

DECIDUOUS

Wier's Cut-leaf Maple, Acer dasycarpum laciniatum.
Cut-leaf Weeping Birch, Betula alba laciniata pendula.
Japanese Weeping Cherry, Cerasus japonica pendula.
Weeping Cherry, Cerasus serotina pendula.
Weeping Ash, Fraxinus rotundifolia pendula.
Weeping Beech, Fagus sylvatica pendula.
Weeping Purple Beech, Fagus sylvatica purpurea pendula.
Weeping Larch, Larix leptolepis pendula.

DECIDUOUS—*continued*

Weeping Mulberry, Morus alba pendula.
Weeping Willow, Salix babylonica.
Wisconsin Weeping Willow, Salix dolorosa.
Thurlow's Weeping Willow, Salix elegantissima.
Weeping Pagoda Tree, Sophora japonica pendula.
Camperdown Elm, Ulmus montana pendula.
Kilmarnock Willow, Salix caprea pendula.

EVERGREEN

Weeping Spruce, Picea excelsa pendula.
Weeping Blue Spruce, Picea pungens, Kosteri pendula.
Thread-branch Cypress, Retinispora filifera pendula.
Sargent's Weeping Hemlock, Tsuga Sargentii pendula.
Weeping Virginian Cedar, Juniperus virginiana pendula.

Formal "Standard" Trees

These are most useful for accentuating points in a formal garden, or for lining a drive where the space is too small for large trees. In the case of the Catalpa, the branches or "head" should be pruned severely to encourage a strong, even growth each year, but this is not necessary with the Maple or Elm. Each of these trees is grafted on a stem of another variety, so any shoots coming from the base or on the stem must be cut off close to leave a clean, straight trunk.

Globe-headed Maple, Acer platanoides globosum.
Bunge's Catalpa (wrongly called Umbrella Tree), Catalpa Bungei.
Globe-headed Elm, Ulmus foliacea umbraculifera.

BERRY-BEARING TREES AND SHRUBS

The ornamental or landscape value of a shrub is greatly enhanced if it has colored fruits. Often, although the flower will be quite inconspicuous, the fruits are so highly colored that they are really preferable to flowers, as, generally speaking, they will last much longer. Furthermore, the garden containing berry-bearing shrubs will be the center of attraction for all kinds of birds, which add life and interest to any place. Those kinds of which the fruit is particularly preferred by birds as food are marked with an asterisk (*).

Red Berries

*Common Barberry, Berberis vulgaris.
*Japanese Barberry, Berberis Thunbergii.
*Bird Cherry, Cerasus pennsylvanica.
*Flowering Dogwood, Cornus florida.
*Cornelian Cherry, Cornus mas.
*Washington Thorn, Cratægus cordata.
*Cockspur Thorn, Cratægus Crus-galli.
*Scarlet Thorn, Cratægus coccinea.
*Hawthorn, Cratægus nitida.
*Hawthorn, Cratægus punctata.
*English Hawthorn, Cratægus Oxyacantha.
Firethorn, Cratægus Pyracantha.
*Scarlet Haw, Cratægus mollis.
Rose Box, Cotoneaster horizontalis.
Rose Box, Cotoneaster disticha.
Rose Box, Cotoneaster divaricata.
Rose Box, Cotoneaster hupehensis.
Rose Box, Cotoneaster bullata.
*Wing-bark Spindle Tree, Euonymus alatus.
*European Spindle Tree, Euonymus europæus
*Chinese Spindle Tree, Euonymus Bungeana.
*Winterberry, Ilex verticillata.
*Morrow's Honeysuckle, Lonicera Morrowii.
*Tartarian Honeysuckle, Lonicera tatarica.
*Ruprecht's Honeysuckle, Lonicera Ruprechtiana.
*Fly Honeysuckle, Lonicera xyloseum.
*Maack's Honeysuckle, Lonicera Maackii.
Mountain Holly, Nemopanthus canadensis.
*Sweet Briar, Rosa rubiginosa.
*Japanese Rose, Rosa rugosa.
*Meadow Rose, Rosa blanda.
*Mountain Ash (orange red), Sorbus aucuparia.
*European Mountain Ash, Sorbus americana.
*Red-fruited Elderberry, Sambucus racemosus.
*High Bush Cranberry, Viburnum Opulus.
*Japanese Cranberry, Viburnum dilatatum.
*Japanese Cranberry, Viburnum americanum

White Berries

White-fruited Dogwood, Cornus candidissima.
Rough-leaved Cornel, Cornus rugosus.
Common Red Osier, Cornus stolonifera.
Red-twigged Dogwood, Cornus alba.
*Snowberry, Symphoricarpos racemosus.

Yellow Fruits

*Goumi, Elæagnus longipes.
*Oleaster, Elæagnus angustifolia.
*Buffalo Berry, Shepherdia argentea.
Sea Buckthorn, Hipphophæ rhamnoides.
*Yellow-fruited Honeysuckle, Lonicera Ruprechtiana xanthocarpum.
*Yellow-fruited Tartarian Honeysuckle, Lonicera tatarica fructo lutea.
*Small-flowered Honeysuckle, Lonicera minutiflora.
Yellow-fruited Privet, Ligustrum vulgaris leucocarpum.
*Yellow-fruited Viburnum, Viburnum Opulus xanthocarpum.

Black Fruits

Hercules' Club, Aralia spinosa.
Barberry, Berberis Gagnepaineii.
Barberry, Berberis verruculosa.
Rose Box, Cotoneaster foveolata.
Rose Box, Cotoneaster moupinensis.
Inkberry, Ilex glabra.
Japanese Holly, Ilex crenata.
Honeysuckle, Lonicera involucrata.
*Common Privet, Ligustrum vulgare.
Chinese Cork Tree, Phellodendron amurense.
*Black Chokeberry, Pyrus nigra.
White Globe Flower, Rhodotypos kerrioides.
*Elderberry, Sambucus canadensis.
*Hairy Viburnum, Viburnum pubescens.
Maple-leaved Viburnum, Viburnum aceriifolium.
*Black Haw, Viburnum prunifolium.
*Hobble Bush, Viburnum alnifolium.
Siebold's Viburnum, Viburnum Sieboldii.
Single Japanese Snowball, Viburnum plicatum.
*Wayfaring Tree, Viburnum lantana.
*Buckthorn, Rhamnus cathartica.

Deep Blue-Black Fruits

Holly-leaved Mahonia, Mahonia aquifolia.
Creeping Mahonia, M. aquifolium repens.
*Blueberry, Vaccinium corymbosum.
*Low Blueberry, Vaccinium pennsylvanicum.
*Arrowwood, Viburnum dentatum.
*Witherod, Viburnum cassinoides.
*Sheepberry, Viburnum lentago.

Blue Fruits

Silky Cornel, Cornus sericea.
Beauty Fruit (mauve fruits), Callicarpa purpurea.
Honeysuckle, Lonicera cœrulea.
Honeysuckle, Lonicera villosa.
Turquoise Berry (a vine), Symplocos cratægoides.
Sweet Leaf (a vine), Ampelopsis versicolor.

PLANTS ATTRACTIVE TO BIRDS

In addition to those with brightly colored fruits, there are many plants that bear seeds which seem to be especially palatable to birds. Certain trees and shrubs are also preferred as nesting sites, therefore the following list should be referred to in conjunction with that of the berried plants.

Deciduous

Shad Bush, Amelanchier canadensis.
Cherry Birch, Betula lenta.
Mahaleb Cherry, Cerasus Mahaleb.
European Bird Cherry, Cerasus padus.
Nettle Tree, Celtis occidentalis.
Shrubby St. John's Wort, Hypericum prolificum.
Spice Bush, Laurus Benzoin.
Japanese Larch, Larix Kaempferi.
Mulberry (White), Morus alba.
Mulberry (Red), Morus rubra.
Bayberry, Myrica cerifera.
Crap Apple, Malus baccata and floribunda.
Sour Gum, Nyssa sylvatica.
Smooth Sumach, Rhus glabra.
Staghorn Sumach, Rhus typhina.
Mountain Currant, Ribes alpinum.
Wild Grape, Vitis Labrusca.
White Grape, Vitis æstivalis.
Weigela, Weigela amabilis.
Coral Berry, Symphoricarpos vulgare.
American Elm, Ulmus americana.
Shining Sumach, Rhus copallina.

Evergreen

Common Juniper, Juniperus communis.
Irish Juniper, Juniperus hibernica.
Red Cedar, Juniperus virginiana.
Austrian Pine, Pinus austriaca.
White Pine, Pinus Strobus.
Red Pine, Pinus resinosa.
Hemlock, Tsuga canadensis.
Canadian Yew, Taxus canadensis.

TREES AND SHRUBS WITH VARIEGATED OR COLORED FOLIAGE

TREES

Schwedler's Maple, Acer platanoides Schwedleri.
Purple-leaved Birch, Betula alba atropurpurea.
Purple or Copper Beech, Fagus sylvatica purpurea.
Purple-leaved Plum, Prunus Pissardii.
Golden Elm, Ulmus americana aurea.

SHRUBS

Variegated Japanese Quince, Cydonia Maulei tricolor.
Purple Barberry, Berberis vulgaris purpurea.
Variegated Dogwood, Cornus alba variegata.
Spaeth's Dogwood, Cornus alba Spaethii.
Purple Hazel, Corylus avellana purpurea.
Goumi, Elæagnus longipes.
Silver Thorn, Elæagnus argentea.
Sea Buckthorn, Hippophæ rhamnoides.
Variegated Rose of Sharon, Hibiscus syriacus variegata.
Variegated Globe Flower, Kerria japonica variegata.
Golden Privet, Ligustrum ovalifolium aureum.
Golden Mock Orange, Philadelphus coronarius aureus.
Golden Hop Tree, Ptelea trifoliata aurea.
Golden Elder, Sambucus nigra aurea.
Golden Ninebark, Sambucus opulifolia aurea.
Variegated Weigela, Weigela hybrida variegata.
Japanese Maple, Acer japonicum aureum.
Japanese Maple, Acer palmatum atropurpureum.
Japanese Maple, Acer palmatum maculatum

SMALL-FLOWERING TREES FOR LAWN SPECIMENS

Sometimes it is desirable to break a view without doing so too harshly. By using any of the following trees the object is achieved and, being beautiful in themselves, the subjects add considerable interest to the general planting. Another use is to plant them among the shrubs in the border, in this way securing height and privacy and varying the sky line of the border.

Flowering Dogwood, Cornus florida.
Pink Dogwood, Cornus florida rubra.
White Fringe, Chionanthus virginicus.
Hawthorn, Cratægus Oxycantha.
Paul's Scarlet Thorn, Cratægus Oxycantha Paulii.
White Hawthorn, Cratægus Oxycantha alba.
Silver Bell, Halesia tetraptera.
Flowering Crab Apple, Pyrus floribunda.
Chinese Crab, Pyrus spectabile.
Parkman's Crab, Pyrus Parkmannii.
Bechtel's Crab, Pyrus ioensis Bechtelii.
Scented Crab, Pyrus coronarius.
Japanese Cherry, Cerasus serrulata in variety.
Flowering Plum (grafted on stem), Prunus triloba.
Flowering Peach, Prunus persica fl. pl.
Sorrel Tree, Oxydendron arboreum.
Soulange's Magnolia, Magnolia Soulangeana.
Japanese Magnolia, Magnolia Kobus.
Chinese Tree Lilac, Syringa pekinensis.
Japanese Tree Lilac, Syringa japonica.
Japanese Storax, Styrax japonica.
Umbrella Tree, Magnolia tripetala.
Large-leaved Magnolia, Magnolia macrophylla.
Pearl Blush, Exochorda grandiflora.

PLANTS FOR AUTUMN COLORING

TREES

Red Maple, Acer rubrum.
Sugar Maple, Acer saccharum.
Washington Thorn, Cratægus cordata.
American Beech, Fagus ferruginea.
Sweet Gum, Liquidambar styraciflua.
Tulip Tree, Liriodendron tulipifera.
Sour Gum, Nyssa sylvatica.
Scarlet Oak, Quercus coccinea.
White Oak, Quercus alba.
Black Oak, Quercus velutina.
Red Oak, Quercus rubra.
Pin Oak, Quercus palustris.
Chestnut Oak, Quercus Prinus.
Sassafras, Sassafras officinalis.
Flowering Dogwood, Cornus florida.

SHRUBS

Mountain Maple, Acer ginnala.
Japanese Barberry, Berberis Thunbergii.
Panicled Dogwood, Cornus paniculata.
Alternate-leaved Dogwood, Cornus alternifolia.
Spindle Tree, Euonymus americana.
Burning Bush, Euonymus atropurpureus.
Wing-bark Spindle Tree, Euonymus alatus.
Sorrel Tree, Oxydedron arboreum.
Chokeberry, Pyrus nigra.
Red Chokeberry, Pyrus arbutifolius.
Smooth Sumach, Rhus copallina.
Fragrant Sumach, Rhus aromatica.
Shining Sumach, Rhus glabra.
Staghorn Sumach, Rhus typhina.
Flowering Currant, Ribes aureum.
Blueberry, Vaccinium corymbosum.
Low Blueberry, Vaccinium pennsylvanicum.
Viburnums, Viburnum (all species).

VINES

Bittersweet, Celastrus scandens.
Oriental Bittersweet, Celastrus orbiculatus.
Virginian Creeper, Ampelopsis quinquefolia.
Boston Ivy, Ampelopsis Veitchii.
Meadow Rose, Rosa blanda.
Glory Vine, Vitis Coignetiæ.
Wild Grape, Vitis Labrusca.
Wild Grape, Vitis æstivalis.
Wild Rose, Rosa lucida.

RAPID GROWING PLANT MATERIALS

Unfortunately the desire for immediate shade is allowed to outweigh the very important question of permanency. Whenever quick growing trees are planted, they should be supplemented with the slower growing but more permanent kinds. It may be generally stated that all quick growing trees have soft wood and are therefore easily broken during storms; furthermore, they are comparatively short lived. Still another objection is that borers are more apt to attack them than the hardwoods. On the other hand, their value in supplying shade in a short time must not be underestimated, and if hardwoods are planted at the same time, the fast growing trees will have served their purpose by the time the permanent kinds are serviceable as shade specimens; the former can then be cut down to allow room for the perfect development of the others.

TREES

DECIDUOUS

Box Elder, Acer Negundo.
Tree of Heaven, Ailanthus glandulosus.
Silver Maple, Acer dasycarpum.
Wild Cherry, Cerasus serotina.
Catalpa (Western), Catalpa speciosa.
Tulip Tree, Liriodendron tulipifera.
Carolina Poplar, Populus caroliniana.
Cottonwood, Populus deltoides.
Lombardy Poplar, Populus nigra fastigiata.
Weeping Willow, Salix babylonica.
White Willow, Salix alba.
Royal Willow, Salix regalis.

EVERGREEN

Norway Spruce, Picea excelsa.
Servian Spruce, Picea Omorika.
Scotch Pine, Pinus sylvestris.

SHRUBS

Red-twigged Dogwood, Cornus alba.
Red Osier, Cornus stolonifera.
Purple Osier, Salix purpurea.
Pussy Willow, Salix discolor.
Goat Willow, Salix caprea.
Rosemary Willow, Salix rosmarinifolia.
Tartarian Honeysuckle, Lonicera tatarica.
Ninebark, Spiræa opulifolia.
Elderberry, Sambucus canadensis.
Deutzia, Deutzia, Pride of Rochester.
Mock Orange, Philadelphus coronarius.

TREES AND SHRUBS WITH DISTINCTIVE COLORED BARK

During the Winter when all deciduous trees and shrubs are devoid of foliage, any color in the garden is indeed a welcome addition. Some fine effects can be obtained by using some of the following items. A most striking instance is the planting of a mass of Siberian Dogwood with the yellow-stemmed Willow or Dogwood; against a carpet of snow the effect is indeed worth the effort. Another shrub of Winter interest is the Wing-bark Euonymus, with its conspicuous corky ridges along the branches, and sometimes an occasional cluster of orange and red fruit that the birds have overlooked.

TREES

Striped-bark Maple, Acer pennsylvanicum.
Cherry Birch, Betula nigra.
Paper Birch, Betula papyrifera.
White Birch, Betula alba.
Aspen, Populus tremuloides.
Sweet Gum (corky bark), Liquidambar Styraciflua.
Golden-bark Willow, Salix vitellina aurea.
Bronze-bark Willow, Salix vitellina britzensis.
Crimean Linden, Tilia euchlora.
Yellow-bark Linden, Tilia platyphyllos aurea

SHRUBS

Siberian Dogwood, Cornus alba sibirica.
Green-stemmed Dogwood, C. alba viridissima.
Red Osier, Cornus stolonifera.
Yellow-stemmed Dogwood, Cornus stolonifera flaviramea.
Yellow Globe Flower, Kerria japonica.
Green-stemmed Goldenbell, Forsythia viridissima.
Red-leaved Rose, Rosa rubrifolia.
Native Rose, Rosa lucida.
Native Rose, Rosa nitida.
Scotch Rose (ornamental thorns), Rosa spinosissima.
Wing-bark Euonymus (corky bark), Euonymus alatus.

PLANTS FOR WITHSTANDING CITY CONDITIONS

It must not be understood that any plants or trees prefer the adverse conditions that are prevalent in large cities. Indeed it is only the most vigorous and adaptable kinds that will live under these conditions, which include lack of water, poor soil, and a prevalence of dust, smoke and injurious gases. With these facts in mind it will at once be realized that any planting in the city must be done carefully and thoroughly. Dig a large hole for every plant, supply the best soil that can be obtained and some well rotted manure, and preserve every root. The foliage can be washed off occasionally by playing a good force of water over the plants; and be on the lookout for insects and diseases. In short, everything that can be, should be done to overcome or mitigate the adverse conditions under which the city planting must live.

TREES—DECIDUOUS

Norway Maple, Acer platanoides.
Tree of Heaven, Ailanthus glandulosus.
Horse Chestnut, Æsculus Hippocastanum.
Cockspur Thorn, Cratægus Crus-galli.
English Hawthorn, Cratægus Oxycantha.
Hackberry, Nettle Tree, Celtis occidentalis.
White Ash, Fraxinus americana.
Green Ash, Fraxinus viridis.
Maidenhair Tree, Ginkgo biloba.
Button Ball, Platanus orientalis.
White Willow, Salix alba.
Pin Oak, Quercus palustris.
European Linden, Tilia europæa.
Silver Linden, Tilia tomentosa.

TREES—EVERGREENS

Nikko Fir, Abies brachyphylla.
Silver Fir, Abies concolor.
Red Cedar, Juniperus virginiana.
Colorado Spruce, Picea pungens.
Blue Spruce, Picea pungens Kosteri.
Scotch Pine, Pinus sylvestris.
Austrian Pine, Pinus austriaca.
Japanese Tree Yew, Taxus cuspidata capitata.
Arborvitæ, Thuya occidentalis.
Sitka Cypress, Thuya Standishii.

Deciduous Shrubs

Five-leaved Angelica, Aralia pentaphylla.
Hercules' Club, Aralia spinosa.
Japanese Barberry, Berberis Thunbergii.
Japanese Quince, Cydonia japonica.
Siberian Dogwood, Cornus alba sibirica.
Red Osier, Cornus stolonifera.
Yellow Osier, Cornus stolonifera flaviramea.
Japanese Red Bud, Cercis japonica.
Rough-leaved Deutzia, Deutzia scabra.
Dwarf Deutzia, Deutzia gracilis.
Deutzia, Deutzia Pride of Rochester.
Lemoine's Deutzia, Deutzia Lemoinei.
American Spindle Tree, Euonymus americana.
Golden Bell, Forsythia intermedia.
Fortune's Golden Bell, Forsythia Fortunei.
Drooping Golden Bell, Forsythia suspensa.
Rose of Sharon, Hibiscus syriacus.
Single Hydrangea, Hydrangea paniculata.
Double Hydrangea, Hydrangea paniculata grandiflora.
Yellow Globe Flower, Kerria japonica.
Amoor River Privet, Ligustrum amurensis.
Californian Privet, Ligustrum ovalifolium.
Regel's Privet, Ligustrum Ibota Regelianum.
Tartarian Honeysuckle, Lonicera tatarica.
White Globe Flower, Rhodotypos kerrioides.
Smoke Bush, Rhus cotinus.
Smooth Sumach, Rhus glabra.
Elderberry, Sambucus canadensis.
Cut-leaf Elderberry, Sambucus canadensis laciniata.
Waterer's Spiræa, Spiræa Anthony Waterer.
Vanhoutte's Spiræa, Spiræa Vanhouttei.
Ninebark, Spiræa opulifolia.
Snowberry, Symphoricarpos racemosus.
Coral Berry, Symphoricarpos vulgare.
Tamarisk, Tamarix africana (and others).
Common Lilac, Syringa vulgaris.
Withe Rod, Viburnum cassinoides.
Wayfaring Tree, Viburnum lantana.
Sheepberry, Viburnum lentago.
Highbush Cranberry, Viburnum Opulus.
Siebold's Viburnum, Viburnum Sieboldii.
Japanese Snowball, Viburnum tomentosum plicatum.
Weigelas, Weigela in variety.

Shrubs—Evergreen

Japanese Holly, Ilex crenata.
Pfitzer's Juniper, Juniperus Pfitzeriana.
Trailing Chinese Juniper, Juniperus chinensis procumbens.
Savin Juniper, Juniperus Sabina.
Gray Carpet Juniper, Juniperus tamariscifolia.
Globe Juniper, Juniperus virginiana globosa.
Swiss Mountain Pine, Pinus montana.
Dwarf Mountain Pine, P. montana Mughus.
Thread-branched Cypress, Retinispora filifera.
Japanese Yew, Taxus cuspidata.
Dwarf Japanese Yew, Taxus cuspidata brevifolia.
Dwarf English Yew, Taxus baccata repandens.
Globe Arborvitæ, Thuya occidentalis globosa.
Tom Thumb Arborvitæ, Thuya occidentalis, Tom Thumb.
Rosenthal's Arborvitæ, Thuya Rosenthalii.
Siberian Arborvitæ, Thuya sibirica.

STREET OR AVENUE TREES

Just as in the case of city planting, every possible precaution should be taken when planting trees on the sidewalk, to give them the best soil available, that the chances of success may be increased. The average street is approximately seventy-five feet between buildings, and the trees should be planted from thirty-five feet to forty feet apart, alternating on each side of the road. On wide streets, which afford one hundred feet or more between buildings, this method of planting is optional, but the street is more evenly shaded if the trees are alternated. On the wider streets, forty-five feet or even fifty feet is not too much to allow between the trees. Where wires are strung along the street, trees that have a long, clean bole, such as the Elm, and some Oaks, should be used, that is, such as will not be damaged by, nor interfere with, the wires.

Average Streets (75 feet wide)

Norway Maple, Acer platanoides.
Pin Oak, Quercus palustris.
Hackberry, Celtis occidentalis.
Green Ash, Fraxinus viridis.
Maidenhair Tree, Ginkgo biloba.
Button Ball, Platanus orientalis.
Sweet Gum, Liquidambar.
European Linden, Tilia europæa.

Wide Streets (90 feet or more)

Norway Maple, Acer platanoides.
Sugar Maple, Acer saccharum.
Button Ball, Platanus orientalis.
Red Oak, Quercus rubra.
Maidenhair Tree, Ginkgo biloba.
Silver Linden, Tilia tomentosa.
American Elm, Ulmus americana.
Scotch Elm, Ulmus montana.

PLANTS SUITABLE FOR FOUNDATION PLANTINGS UNDER GENERAL CONDITIONS

In selecting shrubs for base planting, the main consideration should be the foliage effect, as well as the general character of growth. These shrubs should be well furnished with graceful branches, rather than a few thick stems. Fortunately many such shrubs also produce beautiful flowers so that a foundation can be made effective indeed. Should it be necessary to plant deeply (that is, more than one row) it is important that the shrubs that are taller *at maturity* should be placed in the background; to facilitate selection the following list is tabulated according to the size of the fully grown shrubs. For Winter effect the evergreens are very desirable, but it is not at all necessary to have a solid banking of them. In fact a planting consisting of a combination of flowering shrubs and evergreens is, in the majority of cases, to be preferred. This is because evergreens are inclined to be too stiff and formal, whereas deciduous flowering shrubs have informal outlines, which soften the sharp lines of the house, which is the real object of such a planting.

Large Shrubs (For background)

DECIDUOUS

Allspice, Calycanthus floridus.
Deutzia, Deutzia Pride of Rochester.
Witch Hazel, Hamamelis virginiana.
Scentless Mock Orange, Philadelphus inodorous.
Common Privet, Ligustrum vulgaris.
Persian Lilac, Syringa persica.
Arrowwood, Viburnum dentatum.
Wayfaring Tree, Viburnum lantanum.
Sheepberry, Viburnum lentago.
Siebold's Viburnum, Viburnum Sieboldii.
Golden Bell, Forsythia intermedia.
Golden Bell, Forsythia viridissima.
Rose of Sharon, Hibiscus syriacus.
Japanese Snowball, Viburnum tomentosum plicatum.

EVERGREEN

Chinese Juniper, Juniperus chinensis.
Red Cedar, Juniperus virginiana.
Blue Virginian Cedar, Juniperus virginiana glauca.
Schott's Cedar, Juniperus virginiana Schottii.
Swiss Stone Pine, Pinus Cembra.
Thread-branched Cypress, Retinispora filifera.
Japanese Yew Tree, Taxus cuspidata capitata.
American Arborvitæ, Thuya occidentalis.
Sitka Cypress, Thuya Standishii.

Medium Sized Shrubs

DECIDUOUS

Japanese Barberry, Berberis Thunbergii.
Variegated Dogwood, Cornus alba variegata.
Globe Flower, Kerria japonica.
Lemoine's Deutzia, Deutzia Lemoinei.
Morrow's Honeysuckle, Lonicera Morrowii.
White Globe Flower, Rhodotypos kerrioides
Golden Mock Orange, Philadelphus coronarius aureus.
Fine-leaved Spiræa, Spiræa arguta.
Thunberg's Spiræa, Spiræa Thunbergii.
Bridal Wreath, Spiræa prunifolia, fl. pl.
Vanhoutte's Spiræa, Spiræa Vanhouttei.
Snowberry, Symphoricarpos racemosus.
Coral Berry, Symphoricarpos vulgare.
Lemoine's Mock Orange, Philadelphus Lemoinei.
Round-leaved Spiræa, Spiræa rotundifolia.
Regel's Privet, Ligustrum Regelianum.
Wright's Viburnum, Viburnum Wrightii.
Withe Rod, Viburnum cassinoides.
Scented Guelder Rose, Viburnum Carlesii.
Fontanesia, Fontanesia Fortunei.
Drooping Golden Bell, Forsythia suspensa.
Lace Bush, Stephanandra flexuosa.

EVERGREEN

Grecian Juniper, Juniperus excelsa stricta.
Mountain Pine, Pinus montana.
Japanese Yew, Taxus cuspidata.
Graceful Hemlock, Tsuga canadensis gracilis.
Mountain Laurel, Kalmia latifolia.
Hybrid Rhododendrons, Rhododendron catawbiense hybrids.
Savin Juniper, Juniperus Sabina.
Pfitzer's Juniper, Juniperus Pfitzeriana.
Sargent's Hemlock, Tsuga Sargentii pendula.
Holly-leaved Mahonia, Mahonia japonica.
Cripp's Golden Cypress, Retinispora obtusa Crippsii.
Graceful Japanese Cypress, Retinispora obtusa gracilis.
Dotted Rhododendron, Rhododendron punctatum.
Ink Berry, Ilex glabra.
Fire Thorn, Cratægus Pyracantha.
Japanese Andromeda, Andromeda japonica.

Dwarf Shrubs

DECIDUOUS

Dwarf Deutzia, Deutzia gracilis.
Zenobia, Andromeda speciosa.
Sweet Fern, Comptonia asplenifolium.
Fortune's Spiræa, Spiræa callosa.
Fortune's Spiræa, Spiræa callosa alba.
Waterer's Spiræa. Spiræa Anthony Waterer.
Yellow Root, Xanthorrhiza apiifolia.
St. John's Wort, Hypericum prolificum.
St. John's Wort, Hypericum aureum.
Dwarf Viburnum, Viburnum Opulus nanus.
Dwarf Mock Orange, Philadelphus microphyllus.
Garland Flower, Daphne Mezereum.
Garland Flower, Daphne Genkwa.

EVERGREEN

Compact Chinese Golden Arborvitæ, Biota orientalis compacta aurea.
Compact Chinese Arborvitæ, Biota orientalis compacta.
Gray Carpet Juniper, Juniperus Sabina tamariscifolia.
Chinese Trailing Juniper, Juniperus chinensis procumbens.
Maxwell's Spruce, Picea excelsa Maxwellii.
Pigmy Spruce, Picea excelsa pygmæa.
Spreading Spruce, Picea excelsa Clanbrasiliana.
Compact Japan Cypress, Retinispora obtusa compacta.
Spreading English Yew, Taxus baccata repandens.
Canadian Yew, Taxus canadensis.
Dwarf Arborvitæ, Thuya occidentalis, Tom Thumb.
Dwarf Arborvitæ, Thuya occidentalis, Little Gem.
Prostrate Rose Box, Cotoneaster horizontalis.
Prostrate Rose Box, Cotoneaster horizontalis perpusilla.
Garland Flower, Daphne Cneorum.
Hybrid Rhododendron, Boule de Niege.
Hybrid Rhododendron, Mont Blanc.
Hybrid Rhododendron, Glennyana.
Hybrid Rhododendron, Blandyana.
Hybrid Rhododendron, Kissena.
Japanese Spurge, Pachysandra terminalis.
Chinese Barberry, Berberis verruculosa.

GROUND COVERS

There are many uses for this class of plant, or rather many places where such plants can be used for the same purpose, namely, to cover the ground. Sometimes it is difficult to maintain grass in a certain spot, or it may be inconvenient to cut it; also the bare earth between the shrubbery should be covered. Again, a planting may be desired in a place where tall shrubbery would break a good view. For all such instances the plants recommended in the following list are particularly adapted.

Shady Places

EVERGREEN

Partridge Berry, Mitchellia repens.
Periwinkle, Vinca minor.
Japanese Spurge, Pachysandra terminalis.
English Ivy, Hedera helix.
Creeping Mahonia, Mahonia repens.
Evergreen Bittersweet, Euonymus vegetus.
Evergreen Bittersweet, Euonymus obovatus.
Sharp-leaved Bittersweet, Euonymus acutus.
Small-leaved Bittersweet, Euonymus radicans minima.
Creeping Euonymus, Euonymus radicans.
Japanese Yew, Taxus canadensis.
Wintergreen, Gaultheria procumbens.
Low Blueberry, Vaccinium pennsylvanicum

HERBACEOUS PERENNIALS

Candytuft, Iberis sempervirens.
Bloodroot, Sanguinaria canadensis.
Bugle, Ajuga reptans.
Creeping Speedwell, Veronica repens.
Allion's Speedwell, Veronica Allionii.
Money Wort, Lysimachia nummularia.
Lily of the Valley, Convallaria majalis.
Forget-me-not, Myosotis palustris.
Polypody Fern, Polypodium vulgare.
Coltsfoot, Tussilago Farfara.
Spring Beauty, Claytonia virginica.
Jacob's Ladder, Polemonium reptans.
Ground Ivy, Nepeta glechoma.

In Sunny Places

EVERGREEN

Heather, Erica vulgaris.
Heath, Erica carnea.
Wintergreen, Gaultheria procumbens.
Bearberry, Arctostaphylos Uva-ursi.
Japanese Spurge, Pachysandra terminalis.
Trailing Juniper, Juniperus Sabina prostrata.
Scaly-leaved Juniper, Juniperus squamata.
Gray Carpet Juniper, Juniperus Sabina tamariscifolia.
Canadian Juniper, Juniperus canadensis depressa.
Sand Myrtle, Dendrium buxifolium.

HERBACEOUS PERENNIALS

Rock Cress, Arabis alpina.
Wooly Yarrow, Achillea tomentosa
Snow-in-Summer, Cerastum tomentosum.
Rock Rose, Helianthemum, all varieties.
Lead Wort, Plumbago Larpentæ.
Bluet, Houstonia cœrulea.
Moss Pink, Phlox subulata.
Creeping Baby's Breath, Gypsophilia repens.
Creeping Baby's Breath, Gypsophilia cerastoides.
Stone Crop, Sedum acre.
Stone Crop, Sedum album.
Stone Crop, Sedum sexangulare.
Stone Crop, Sedum stoloniferum.
Arenaria, Arenaria cæspitosa.
Sandwort, Arenaria balearica.
Trailing Arbutus, Epigæa repens.
Calystegia, Calystegia pubescens.
Candytuft, Iberis sempervirens.
Creeping Phlox, Phlox stolonifera.
Creeping Buttercup, Ranunculus repens.
Thyme, Thymus Serpyllum.
Wooly Thyme, Thymus lanuginosus.
Speedwell, Veronica Allionii.
Speedwell, Veronica Teucrium.

VINES FOR VARIOUS PURPOSES

FLOWERING

Silver Vine, Actinidia arguta.
Trumpet Vine, Bignonia radicans.
Large-flowered Trumpet Vine, Bignonia grandiflora.
Small-flowered Clematis, Clematis paniculata.
Large-flowered Clematis, Clematis Jackmannii
White-flowered Clematis, Clematis Henryi.
Rose-flowered Clematis, Clematis Ville de Lyon.
Double White Clematis, Clematis Duchess of Edinburgh.
Everlasting Pea, Lathyrus latifolius.
Japanese Honeysuckle, Lonicera japonica Halliana.
Japanese Honeysuckle, Lonicera Hechrottii.
Polygonum, Polygonum baldschuanicum.
Roses, Rosa Wichuraiana, varieties.
Roses, Rosa multiflora, varieties.
Wistaria, Wisteria multijuga.
Wistaria, Wisteria sinensis.
Climbing Hydrangea, Schizophragma hydrangeoides.

WITH ORNAMENTAL FRUITS

Silver Vine, Actinidia arguta.
Akebia, Akebia quinata.
Akebia, Ampelopsis heterophylla.
Bittersweet, Celastrus scandens.
Oriental Bittersweet, Celastrus orbiculatus.
Small-flowered Clematis, Clematis paniculata.
Matrimony Vine, Lycium halimifolium.
Chinese Matrimony Vine, Lycium chinense.
Chinese Matrimony Vine, Solanum dulcamara.
Glory Vine, Vitis coignetiæ.

FOR FOLIAGE EFFECT

Woodbine, Ampelopsis quinquefolia.
Boston Ivy, Ampelopsis Veitchii.
Low's Ivy, Ampelopsis Lowii.
Akebia, Akebia quinata.
Glory Vine, Vitis coignetiæ.
Silver Vine, Actinidia arguta.
Japanese Honeysuckle, Lonicea japonica.
Dutchman's Pipe, Aristolochia Sipho.
Matrimony Vine, Lycium halimifolium.
Kudzu Vine, Pueraria Thunbergianum.
Silk Vine, Periploca græca.

OF QUICK GROWTH

Dutchman's Pipe, Aristolochia Sipho.
Kudzu Vine, Pueraria Thunbergianum.
Polygonum, Polygonum baldschuanicum.
Small-flowered Clematis, Clematis paniculata
Hop Vine, Humulus japonica.
Moon Vine, Ipomœa pandurata.

SELF CLINGING

(By means of aerial rootlets that adhere to brick, etc.)

Ampelopsis, Ampelopsis Engelmannii.
Low's Ivy, Ampelopsis Lowii.
Boston Ivy, Ampelopsis Veitchii.
Trumpet Vine, Bignonia radicans.
Euonymus, Evonymus radicans.
Evergreen Bittersweet, Evonymus radicans vegetus.
English Ivy, Hedera helix.
Climbing Hydrangea, Schizophragma hydrangioides.

Climbing by means of tendrils and leaf stalks

Silver Vine, Actinidia arguta.
Woodbine, Ampelopsis quinquefolia.
Dutchman's Pipe, Aristolochia Sipho.
Bittersweet, Celastrus scandens.
Small-flowered Clematis, Clematis paniculata.
Japanese Honeysuckle, Lonicera japonica.
Silk Vine, Periploca græca.
Kudzu Vine, Pueraria Thunbergiana.
Wistaria, Wisteria multijuga.
Wiataria, Wisteria sinensis.
Large-flowered Clematis, Clematis Jackmanii and varieties.

AQUATICS OR WATER PLANTS

For water over two feet deep the Water Lilies should be used; of these there are a large number of varieties in various colors. These are generally best planted in a shallow basket which is let down in the pool wherever desired. A better effect can be obtained if a few rather than many plants are used, as in the latter case the surface of the water is liable to be practically covered with foliage, which eliminates the possibility of reflections. Other plants mentioned in this list should be planted around the edge of the pool or in it to a depth of one foot or less of water. Wherever possible give the plants a good start by supplying them with good soil, then, after they are established, very little care will be necessary.

Variegated Sweet Flag, Acorus japonicus variegatus.
Sweet Flag, Acorus calamus.
Flowering Rush, Butomus umbellatus.
Water Arum, Calla palustris.
Sedge, Carex lurida.
Sedge, Carex vulgaris.
Umbrella Plant, Cyperus alternifolius.
Paper Plant, Cyperus papyrus.
Water Hyacinth, Eichhornia crassipes major.
Yellow Flag, Iris pseudacorus.
Common Blue Flag, Iris versicolor.
Jussia, Jussiæa longifolia.
Water Snowflake, Limnanthemum indicum.
Water Poppy, Limnocharis Humboldtii.
Parrot's Feather, Myriophyllum proserpinacoides.
Swamp Loosestrife, Nesæa verticillata.
Arrow Arum, Peltandra virginica.
Pickerel Weed, Pontederia cordata.
Arrowhead, Sagittaria japonica, fl. pl.
Lizard's Tail, Saururus cernuus.
Cat Tail, Typha latifolia.
Wild Rice, Zizania aquatica.
Water Lilies (white), Nymphæa alba candidissima.
Water Lilies (rosy red), Nymphæa gloriosa.
Water Lilies (yellow), Nymphæa Marliacea chromatella.
Water Lilies (pink), Nymphæa Marliacea rosea.
Water Lilies (white, native), Nymphæa odorata.

PLANTS FOR ROCK GARDENS

SHRUBS—DECIDUOUS

Garland Flower, Daphne Genkwa.
Mazereon Pink, Daphne Mezereum.
Mezereon Pink, Daphne Mezereum alba.
Aaron's Beard, Hypericum calycinum.
Shrubby Cinquefoil, Potentilla fruticosa.
Three-leaved Cinquefoil, Potentilla tridentata.
Korean Rose, Rosa Jackii.
Dwarf Bush Cranberry, Viburnum Opulus nana.
Fortune's Spiræa, Spiræa callosa.

SHRUBS—EVERGREENS

Bear Berry, Arctostaphylos Uva-ursi.
Evergreen Azalea, Azalea amœna.
Japanese Azalea, Azalea Hinodigiri.
Compact Chinese Arborvitæ, Biota orientalis compacta.
Trailing Rose Box, Cotoneaster horizontalis.
Trailing Rose Box, Cotoneaster horizontalis perpusilla.
Trailing Barberry, Berberis verruculosa.
Sand Myrtle, Dendrium buxifolium.
Daphne, Daphne Cneorum.
Heath, Erica carnea.
Heather, Erica vulgaris.
Euonymus, Euonymus obovata.
Euonymus, Euonymus radicans.
Euonymus, Euonymus radicans acutus.
Euonymus, Euonymus radicans minimus.
Wintergreen, Gaultheria procumbens.
Small-leaved Japanese Holly, Ilex crenata microphylla.
Trailing Canadian Juniper, Juniperus canadensis depressa.
Prostrate Juniper, Juniperus Sabina prostrata.
Chinese Trailing Juniper, Juniperus chinensis procumbens.
Scaly-leaved Juniper, Juniperus squamata.
Gray Carpet Juniper, Juniperus Sabina tamariscifolia.
Creeping Mahonia, Mahonia aquifolia repens
Maxwell's Spruce, Picea excelsa Maxwellii.
Pigmy Spruce, Picea excelsa pygmæa.
Spreading Spruce, Picea excelsa Clanbrasiliana.
Dwarf Mountain Pine, Pinus montana Mughus.
Dwarf Japanese Cypress, Retinispora obtusa compacta.
Short-leaved Japan Yew, Taxus cuspidata brevifolia.
Spreading English Yew, Taxus baccata repandens.
Dwarf Arborvitæ, Thuya occidentalis, Little Gem, Tom Thumb.
Wilson's Rhododendron, Rhododendron Wilsonii.
Rusty Rhododendron, Rhododendron ferrugineum.
Myrtle-leaved Rhododendron, Rhododendron myrtifolium.
Hybrid Rhododendron, Rhododendron Boule de Niege, Mont Blanc.
Weeping Hemlock (grafted low), Tsuga Sargentii pendula.
Partridge Berry, Mitchellia repens.
Pachystima, Pachystima Canbyi.

Herbaceous Perennials

Wooly Yarrow, Achillea tomentosa.
Bird's Eye, Adonis amurensis.
Ox Eye, Adonis vernalis.
Bugle (Geneva), Ajuga genevensis.
Bugle, Ajuga reptans
Golden Tuft, Alyssum saxatile.
Androsace, Androsace sarmentosa Chumbyi.
Alpine Columbines, Aquilegia alpina.
Dwarf Columbine, Aquilegia flabellata nana.
Rock Cress, Arabis alpina.
Sandwort, Arenaria balearica.
Sandwort, Arenaria montana.
Thrift, Armeria maritima.
Arnebia, Arnebia echioides.
Sweet Woodruff, Asperula odorata.
Alpine Aster, Aster alpina.
Alpine Aster, Aster ptarmicoides.
Alpine Aster, Aster subcæruleus.
False Wall Cress, Aubrietia deltoidea.
False Wall Cress, Calamintha alpina.
Calystegia, Calystegia pubescens, fl. pl.
Harebell, Campanula carpatica.
Blue Bell, Campanula rotundifolia.
Snow-in-Summer, Cerastium tomentosum.
Arctic Daisy, Chrysanthemum arcticum.
Lily of the Valley, Convallaria majalis.
Crosswirt, Crucianella stylosa.
Chinese Larkspur, Delphinium chinense.
Maiden Pink, Dianthus deltoides.
Shooting Star, Dodecatheon Media.
Whitlow Grass, Draba fladnizensis.
Dragon's Head, Dracocephalum grandiflorum.
Trailing Arbutus, Epigæa repens.
Epimedium, Epimedium alpina.
Epimedium, Epimedium diphyllum roseum.
Epimedium, Epimedium macranthum violaceum.
Erigeron, Erigeron glabellus.
Bottle Gentian, Gentiana Andrewsii.
Globe Daisy, Globularia trichosantha.
Baby's Breath, Gysophylla cerastioides.
Baby's Breath, Gypsophylla repens.
Rock Rose, Helianthemum vulgare and varieties.
Christmas Rose, Helleborus niger.
Liver Leaf, Hepatica triloba.
Alum Root, Heuchera brizoides.
Coral Bells, Heuchera sanguinea.
Hutchinsia, Hutchinsia alpina.
Gold Flower, Hypericum Moserianum.
Candytuft, Iberis gibraltica.
Candytuft, Iberis sempervirens.
Crested Iris, Iris cristata.
Dwarf Iris, Iris pumila and varieties.
Spotted Nettle, Lamium maculatum.
Linum, Linum perenne.
Linum, Linum perenne album.
Ragged Robin, Lychnis Flos-cuculi.
German Catchfly, Lychnis Viscaria splendens.
Moneywirt, Lysimachia nummularia.
Forget-me-not, Myosotis alpestris.
Ground Ivy, Nepeta Glechoma.
Ground Ivy, Nepeta Mussinii.
White Cup, Nierembergia rivularis.
Dwarf Evening Primrose, Œnothera missouriensis.
Cactus (Prickly Pear), Opuntia arenaria.
Cactus (Prickly Pear), Opuntia Camanchica.
Cactus (Prickly Pear), Opuntia Rafinesquii.
Cactus (Prickly Pear), Opuntia polyantha.
Iceland Poppy, Papaver nudicaule.
Creeping Phlox, Phlox amœna.
Canadian Phlox, Phlox divaricata.
Perry's Phlox, Phlox divaricata Laphami.
Perry's Phlox, Phlox ovata.
Moss Pink, Phlox subulata.
Moss Pink, Phlox stolonifera.
Polemonium, Polemonium reptans.
Leadwort, Plumbago Larpentæ.
Flowering Moss, Pyxidanthera barbulata.
Cowslip, Primula veris.
Selfheal, Prunella grandiflora.
Lungwort, Pulmonaria angustifolia azurea.
Bethlehem Sage, Pulmonaria saccharata.
Buttercup, Ranuculus bulbosus, fl. pl.
Creeping Buttercup, Ranunculus repens.
Rhexia, Rhexia virginica.
Bloodroot, Sanguinaria canadensis.
Rock Soapwort, Saponaria ocymoides.
Saxifrage, Saxifraga pedmontana.
Saxifrage, Saxifraga umbrosa.
Scutellaria, Scutellaria baicalensis cœlestina.
Stonecrop (yellow), Sedum acre.
Stonecrop (white), Sedum album.
Stonecrop (white), Sedum Middendorfianum.
Stonecrop, (white), Sedum pulchellum.
Stonecrop (white), Sedum sexangulare.
Stonecrop (white), Sedum Sieboldii.
Stonecrop (white), Sedum stoloniferum.
House Leek, Sempervivum.
Shortia, Shortia galacifolia.
Woundwort, Stachy's grandiflora.
American Germanda, Teucrium canadensis.
Dwarf Meadow Rue, Thalictrum minus.
Thyme, Thmus citriodorus.
Mountain Thyme, Thymus sepyllum.
Wooly-leaved Thyme, Thymus lanuginosus.
Tunica, Tunica saxifraga.
Speedwell, Veronica Alliionii.
Speedwell, Veronica gentianoides.
Speedwell, Veronica repens.
Speedwell, Veronica spicata erica.
Speedwell, Veronica Teucrium rupestris.
Horned Violet, Viola cornuta.
Bird-foot Violet, Viola pedatum.
Common Yellow Violet, Viola pubescens.
Haage's Lychnis, Lychnis Haageana.

Annuals

While it is possible to secure a good succession of bloom from early Spring till late Autumn with herbaceous perennials, it is to annuals we look for a profusion of flowers in Midsummer. The ease with which annuals can be grown, as well as their beauty and thankfulness, has made them almost indispensable in garden making. Many perennials, after flowering, leave a practically bare spot in the border, which can be conveniently filled in with annuals so that the border is full of color throughout the season. When convenient,

and where space is available, seeds can be sown and the plants thinned out, but plants started in pots are comparatively inexpensive and can be bought in the quantities needed, and set out immediately. A border devoted entirely to annuals is a joy to the owner all the season, especially if he or she does the planting. Because of the large number of annuals available, in every possible form, color and texture, no attempt will be made here to list them. The reader is referred to other books dealing particularly and in detail with these subjects; for example, "The Little Book of Annuals," by Alfred C. Hottes.

SUCCESSION OF BLOOM IN FLOWERING SHRUBS

While shrubs are planted mainly for foliage effect, it is a decided advantage to have a continual display of flowers from early Spring until late Fall, and the following table is submitted to make this possible. By comparing notes taken from year to year the author has found that shrubs do not consistently follow the same order of bloom each year. For instance, one year the Shadbush will be in full bloom a week or ten days before the Starry Magnolia opens, while another year the latter will precede by some days; sometimes the Japanese Quince leads the Golden Bell, but the following year the order may be reversed, etc. The actual date of blooming in the same place also differs considerably from year to year, dependent of course upon weather conditions, but these differences will not interfere with a general selection made for continual bloom.

Common Name	*Botanical Name*	*Dominant Color*
Japanese Witch Hazel	Hamamelis japonica	Deep yellow

Blooms sometimes late in February but generally late in March.

APRIL

Common Name	*Botanical Name*	*Dominant Color*
Garland Flower	Daphne Mezereum	Light purple
White Garland Flower	Daphne Mezereum album	Creamy white
Cornelian Cherry	Cornus mas	Yellow
Golden Bell	Forsythia intermedia	Yellow
Fortune's Golden Bell	Forsythia Fortunei	Yellow
Drooping Golden Bell	Forsythia suspensa	Yellow
Japanese Quince	Cydonia japonica	Scarlet
Starry Magnolia	Magnolia stellata	White
Standish's Honeysuckle	Lonicera Standishii	White
Fragrant Honeysuckle	Lonicera fragrantissima	White

EARLY MAY

Shad Bush	Amelanchier canadensis	White
Red Bud	Cercis canadensis	Rosy purple
Tamarisk	Tamarix æstivalis	Pink
Bridal Wreath	Spiræa prunifolia, fl. pl.	White
Flowering Plum	Prunus triloba	Pink
Wild Azalea	Azalea Vaseyi	Light pink
Flowering Peach	Prunus persica, fl. pl.	Various
Blue-fruited Honeysuckle	Lonicera cœrulea	White
Fine-leaved Spiræa	Spiræa arguta	White
Thunberg's Spiræa	Spiræa Thunbergii	White
Wild Currant	Ribes aureum	Yellow
Garland Flower	Daphne Cneorum	Pink
Soulange's Magnolia	Magnolia Soulangeana	Rose pink
Japanese Cherry	Cerasus serrulata	Pink and white
Lilac	Syringa obata	Lavender
Rhodora	Azalea canadensis	Purple
Beach Plum	Prunus maritima	White
Flowering Almond	Prunus Amygdalus	White and pink

MIDDLE MAY

Common Name	*Botanical Name*	*Dominant Color*
Flowering Dogwood	Cornus florida	White
Pink Dogwood	Cornus florida rubra	Pink
White Globe Flower	Rhodotypos kerrioides	White
Flowering Crab Apple	Pyrus floribunda	Pink
Parkman's Crab	Pyrus Parkmannii	Pink
Lenne's Magnolia	Magnolia Lennei	Reddish purple
Red Elderberry	Sambucus racemosus	White
Wayfaring Tree	Viburnum lantana	White
Hobble Bush	Viburnum alnifolium	White
Japanese Azalea	Azalea Kaempferi	Brick red
Scented Guelder Rose	Viburnum Carlesii	Blush
Vanhoutte's Spiræa	Spiræa Vanhouttei	White
Pinxter Flower	Azalea nudiflora	Pink
Yellow Globe Flower	Kerria japonica	Yellow

LATE MAY

Hawthorn	Cratægus Oxyacantha	White and pink
Paul's Scarlet Thorn	Cratægus Oxyacantha Paulii	Scarlet
Scarlet Thorn	Cratægus coccinea	Whlte
Deutzia (Lemoine's)	Deutzia Lemoinei	White
Dwarf Deutzia	Deutzia gracilis	White
Pearl Bush	Exochorda grandiflora	White
Job's Tears	Staphylea colchica	Creamy white
Xanthoceras	Xanthoceras sorbifolia	White
Snowdrop Tree	Halesia tetraptera	White
Morrow's Honeysuckle	Lonicera Morrowii	White
Tartarian Honeysuckle	Lonicera tatarica	White and pink
Reeve's Spiræa	Spiræa Reevesiana	White
Lilac	Syringa vulgaris	White and purple
Persian Lilac	Syringa persica	White and lavender
Siberian Pea Tree	Caragana arborescens	Yellow
Snowball	Viburnum Opulus sterile	White
Black Haw	Viburnum prunifolium	White
Wright's Viburnum	Viburnum Wrightii	White
Bechtel's Crab	Pyrus ioensis Bechtelii	Pink
Single Japan Snowball	Viburnum tomentosum	White
Chokeberry	Pyrus nigra	White
Red Chokeberry	Pyrus arbutifolia	White
Rouen Lilac	Syringa rothomagensis	Deep lavender
Ghent Azalea	Azalea pontica	Various
Holland Azaleas	Azalea mollis	Flame colors

EARLY JUNE

Siebold's Viburnum	Viburnum Sieboldii	White
Japanese Snowball	Viburnum tomentosum plicatum	White
White Fringe	Chionanthus virginicus	White
Flame Azalea	Azalea calendulacea	Orange
Highbush Cranberry	Viburnum Opulus	White
Red-twigged Dogwood	Cornus alba	White
Cockspur Thorn	Cratægus Crus-galli	White
Harrison's Rose	Rosa "Harrison's Yellow"	Yellow
Japanese Rose	Rosa rugosa	Red and white
Sheepberry	Viburnum lentago	White
Hungarian Lilac	Syringa Josikæa	Rosy purple
Sweet Leaf	Symplocus cratægoides	White
Lilac	Syringa villosa	Lavender
Weigela	Weigela floribunda	Pink
Weigela	Weigela amabilis and others	Various
Scotch Rose	Rosa spinosissima	Yellow
Meadow Rose	Rosa blanda	Pink

MIDDLE JUNE

Mock Orange	Philadelphus coronarius	White
Deutzia	Deutzia, Pride of Rochester	Blush
Rough-leaved Deutzia	Deutzia scabra	White
Lemoine's Mock Orange	Philadelphus Lemoinei	White
Tree Azalea	Azalea arborescens	White
Ninebark	Spiræa opulifolia	White
Withe Rod	Viburnum cassinoides	White
Bladder Senna	Colutea arborescens	Yellow

MIDDLE JUNE—*continued*

Common Name	*Botanical Name*	*Dominant Color*
Maple-leaved Viburnum	Viburnum acerifolium	White
Japanese Tree Lilac	Syringa japonica	Pale lavender
Rose Acacia	Robinia hispida rosea	Pink
Japanese Storax	Styrax japonica	White
French Tamarisk	Tamarix gallica	Pink
Sweet Briar	Rosa rubiginosa	Blush
Wild Rose	Rosa nitida	Pink
Japanese Dogwood	Cornus Kousa	White
Washington Thorn	Cratægus cordata	White
Allspice	Calycanthus floridus	Brown

LATE JUNE

Arrowwood	Viburnum dentatum	White
Silky Osier	Cornus sericea	White
Elderberry	Sambucus canadensis	White
Sweet Bay	Magnolia glauca	Cream
Weigela	Weigela Eva Rathke	Carmine
Scentless Mock Orange	Philadelphus inodorus	White
Clammy Azalea	Azalea viscosum	White
Common Viburnum	Viburnum molle	White
Lead Plant	Amorpha canescens	Rosy purple
Bastard Indigo	Amorpha fruticosa	Purple

EARLY JULY

Ash-leaved Spiræa	Spiræa sorbifolia	Cream
Virginia Tea	Itea virginica	White
New Jersey Tea	Ceanothus americanus	White
Queen-of-the-Meadow	Spiræa salicifolia	White
Smooth Sumach	Rhus glabra	Yellow
Shrubby Cinquefoil	Potentilla fruticosa	Yellow
Swamp Rose	Rosa carolina	Pink
Flowering Raspberry	Rubus odoratus	Rose pink
Summer-blooming Spiræa	Spiræa callosa	Pink

MIDDLE JULY

Native Hydrangea	Hydrangea arborescens	White
Native Hydrangea	Hydrangea radiata	White
Aitchinson's Spiræa	Spiræa Aitchinsonii	Cream
Billard's Spiræa	Spiræa Billardii	Pink
Douglas's Spiræa	Spiræa Douglasii	Pink
Lindley's Spiræa	Spiræa Lindleyana	White
Smoke Bush	Rhus cotinus	Purple
Varnish Tree	Kœlreuteria paniculata	Yellow
Prairie Rose	Rosa setigera	Pink

LATE JULY

Waterer's Spiræa	Spiræa Anthony Waterer	Rose pink
Butterfly Bush	Buddleia Veitchii	Lavender
Shrubby St. John's Wort	Hypericum aureum	Yellow
Shrubby St. John's Wort	Hypericum prolificum	Yellow
Sorrel Tree	Oxydendron arboreum	White
Sweet Pepper Bush	Clethra alnifolia	White
Spiræa	Spiræa albiflora	White
Early Hydrangea	Hydrangea paniculata præcox	White
Buttonball Bush	Cephalanthus occidentalis	White
Oak-leaved Hydrangea	Hydrangea quercifolia	Cream
Staghorn Sumach	Rhus typhina	Red

AUGUST

Hercules' Club	Aralia spinosa	Cream
Single Hydrangea	Hydrangea paniculata	White
Double Hydrangea	Hydrangea paniculata grandiflora	White
Rose of Sharon	Hibiscus syriacus	Various
Hardhack	Spiræa tomentosa	Pink
Chaste Bush	Vitex Agnus-castus	Lavender
Sweet Pea Shrub	Lespedeza Sieboldii	Purple rose
White Pea Shrub	Lespedeza bicolor	Rose pink
Sweet Pea Shrub	Lespedeza Sieboldii alba	White
Blue Spiræa	Caryopteris mastacanthus	Lavender blue

Witch Hazel (Hamamelis virginiana), Yellow ..... Blooms in October or November

HERBACEOUS PERENNIALS ARRANGED ACCORDING TO HEIGHT AND FLOWERING SEASON

Those marked with an asterisk (*) are good for cutting.

MARCH

Name	*Color*	*Height in inches*
Mitchella repens	Pink	Trailing
Claytonia virginica	Light pink	3 to 4
Scilla sibirica	Blue and white	3 to 6
Chionodoxa Luciliæ	Blue and white	4 to 6
Galanthus (Snowdrops)	White	4 to 6
Crocus, various	Various	4 to 6
Hepatica acutiloba	Light blue	6 to 12
Hepatica triloba	Blue	6 to 12
Erianthus hymenalis	Yellow	6 to 12
Adonis pyrenaica	Yellow	6 to 12
Adonis amurensis	Yellow	6 to 12
Adonis amurensis fl. pl.	Yellow	6 to 12
Houstonia serpyllifolia	Light purple	6 to 12
Sanguinaria canadensis	White	6 to 12
Adonis vernalis	Bright yellow	9 to 12
*Fritillaria meleagris	Yellow, spotted	12 to 15
Helleborus niger	Blush	12 to 15

APRIL

Draba fladnizensis	Creamy	Trailing
Epigæa repens	Pink	Trailing
Lithospermum prostratum and var.	Blue (heavenly blue, best)	Trailing
Androsace sarmentosa Chumbyi	Rose pink	2 to 3
Arenaria balearica	White	3 to 4
Arenaria montana	White	3 to 4
Claytonia virginica	Light pink	3 to 4
Phlox subulata Nelsonii (best)	White	3 to 4
Nepeta glechoma	Purple blue	3 to 5
Nepeta glechoma	Blue	4
Bellis perennis	White and pink	4 to 6
Phlox subulata	White	4 to 6
Phlox subulata lilacina	Lilac	4 to 6
Phlox subulata rosea	Rose	4 to 6
Chionodoxa Luciliæ	Blue and white	4 to 6
Nepeta Mussini	Lavender	4 to 6
Dodecatheon Media	Pink and orange	4 to 8
Hutchinsia alpina	White	5 to 6
*Viola cornuta, Admiration	Purple	5 to 8
Viola cornuta, lutea splendens	Yellow	5 to 8
*Viola cornuta, G. Wermig	Blue	5 to 8
Viola cornuta, White Perfection	White	5 to 8
Muscari botryoides	Blue	5 to 8
Muscari botryoides alba	White	5 to 8
Tussilago Farfara	Yellow	5 to 8
Hepatica triloba	Blue	6
*Primula veris	Yellow	6
Violet, Double Russian	Deep purple	6
Aubrietia deltoidea græca	Purple	6
Arabis alpina and var.	White	6 to 8
Primula acaulis	White	6 to 8
Primula acaulis cœrulea	Purple white	6 to 8
Primula acaulis Croussei plena	Purple red	6 to 8
*Primula vulgaris	Yellow	6 to 8
Ranunculus gramineus	Bright yellow	6 to 8
Vinca minor	Blue	6 to 8
Houstonia sepyllifolia	Light purple	6 to 9
Primula vulgaris cœrulea	Blue	6 to 9
Aubrietia deltoidea	Lavender blue	6 to 9

APRIL—*continued*

Name	*Color*	*Height in inches*
Smilacina racemosa	White	6 to 9
Anemone angulosa	Blue	6 to 9
Aubrietia Hendersonii	Lavender blue	6 to 9
Lychnis alpina	Pink	6 to 9
Anemone sylvestris	White	6 to 10
Pulmonaria angustifolia azurea	Gentian blue	6 to 12
Adonis pyrenadca	Yellow	6 to 12
Hepatica acutiloba	Light blue	6 to 12
Myosotis alpestris var.	Sky blue	8 to 10
Myosotis palustris semperflorens	Sky blue	8 to 10
Anemone patens nuttalliana	Purple	8 to 12
Anemone ranunculoides	Yellow	8 to 12
Erythronium americanum	Yellow	8 to 12
*Anemone pulsatilla	Violet	9 to 12
Allium molle	Yellow	9 to 12
Erythronium americanum	Yellow	9 to 12
Adonis vernalis	Bright yellow	9 to 12
*Papaver nudicaule	Various	9 to 15
Hyacinths	Various	9 to 15
Daphne Cneorum	Rose pink	9 to 15
Anchusa myosotidiflora	Blue	10 to 12
Iris pumila	Various	10 to 12
*Phlox divaricata and var.	Lavender to violet	10 to 12
*Phlox Laphamii	Deep lavender	10 to 12
Saxifraga megasea and var.	Rose to crimson	10 to 12
Adonis amurensis	Yellow	12
Trillium erectum	Purple	12
Allysum saxtile compactum	Yellow	12
Dicentra canadensis	White	12
*Aquilegia flabellata nana alba	White	12
Helleborus niger	Blush white	12 to 15
Phlox pilosa splendens	Rosy carmine	12 to 15
Trillium grandiflorum	White	12 to 15
Saxifraga crassifolia	Blush	12 to 15
*Narcissus poeticus	White	12 to 15
*Daffodils	Yellow	12 to 15
*Tulips, early variety	Various	12 to 24
Actæa alba	White	15 to 18
Iris interregna	Various	18
*Aquilegia flabellata	Lilac	18
Arisæma triphyllum	Purple	18 to 24
*Veronica gentianoides	Blue	18 to 24
Saxifraga peltata	Pink	18 to 24
Euphorbia polychroma	Yellow	24

MAY

Draba androsacea	White	Trailing
Lithospermum prostratum and var.	Blue	Trailing
Lysimachia Nummularia	Yellow	Trailing
Calystegia pubescens fl. pl.	Pink	Trailing
Veronica repens	Light blue	Trailing
Epigæa repens	Pink	Trailing
Arenaria balearica	White	3 to 4
Arenaria montana	White	3 to 4
Veronica rupestris	Bright blue	3 to 4
Veronica rupestris alba	White	3 to 4
Viola pedata	Blue	3 to 4
Viola pedata bicolor	Blue and purple	3 to 4
Nepeta glechoma	Purple blue	3 to 5
Sagina subulata	White	3 to 5
Veronica Allionii	Gentian blue	3 to 5
Phlox subulata and vars.	Various	3 to 6
*Shortia galacifolia	White	3 to 6
Iris cristata	Blue	4
Nepeta Mussinii	Lavender	4 to 6
Ajuga reptans rubra	Reddish purple	4 to 6
Dodecatheon Media	Pink and orange	4 to 8
Vinca minor and vars.	Blue	4 to 8
Viola odorata	Blue	5 to 8
Phlox Stellaria	Lavender blue	5 to 8
Ranuculus ficaria	Yellow	5 to 6

MAY—*continued*

Name	*Color*	*Height in inches*
Globularia trichosantha	Blue	5 to 8
*Viola cornuta and var	Various	5 to 8
Ajuga reptans	Purplish blue	6
Armeria dianthoides	White	6
Arabis alpina	White	6 to 8
Arabis alpina rosea	Pink	6 to 8
Epimedium niveum	White	6 to 8
Asperula odorata	White	6 to 8
Polemonium reptans	Blue	6 to 8
*Primula Sieboldii	Various	6 to 8
Ranuculus gramineus	Bright yellow	6 to 8
*Convallaria majalis	White	6 to 9
*Iberis sempervirens and vars	White	6 to 9
Primula vulgaris cœrulea	Blue	6 to 9
Ajuga genevensis	Blue	6 to 9
Anemonella thalictroides	White	6 to 9
Aubrietia deltoidea	Lavender blue	6 to 9
Papaver alpinum	White	6 to 9
Lamium album	White	6 to 9
Potentilla tridentata	White	6 to 9
Arnebia echioides	Yellow	6 to 9
*Iris pumila eburnea	Creamy	6 to 9
*Iris pumila florida	Lemon yellow	6 to 9
*Iris pumila formosum	Violet	6 to 9
Myosotis alpestris alba	White	6 to 9
Myosotis alpestris, Victoria	Light blue	6 to 9
Cerastium Biebersteinii	White	6 to 9
Lychnis alpina	Pink	6 to 9
Armeria alpina	Pink	6 to 9
Aubrietia Hendersonii	Lavender blue	6 to 9
Aubrietia purpurea	Violet	6 to 9
*Anemone sylvestris	White	6 to 9
*Aster alpinus	Purple	6 to 10
Aster alpinus albus	White	6 to 10
Nierembergia rivularis	White	6 to 10
Veronica Teucrium	Blue	6 to 12
*Iris pumila cyanea	Purple	6 to 12
Potentilla pyrenaica	Yellow	6 to 12
Pulmonaria angustifolia azurea	Gentian blue	6 to 12
Pulmonaria saccharata maculata	Blue	6 to 12
Ranunculus repens fl. pl	Yellow	6 to 12
Tiarella purpurea major	Salmon red	6 to 12
Iris gracilipes	Lilac	6 to 12
Epimedium Musschianum rubrum	Red	8
Epimedium sulphureum	Yellow	8 to 10
Epimedium violaceum	Violet	8 to 10
Myosotis alpestris	Sky blue	8 to 10
Myosotis palustris semperflorens	Sky blue	8 to 10
Saponaria ocymoides	Rosy red	8 to 10
Anemone patens nuttalliana	Purple	8 to 12
Anemone ranunculoides	Yellow	8 to 12
Iberis gibraltarica	Lilac	8 to 12
Epimedium diphyllum roseum	Rose	8 to 12
Epimedium pinnatum colchicum	Yellow	9
Anemone pulsatilla	Violet	9
*Cypripedium acaule	Rosy purple	9 to 12
*Cypripedium pubescens	Yellow	9 to 12
*Cypripedium spectabile	Pink	9 to 12
Primula elatior superba	Yellow	9 to 12
Allium Moly	Yellow	9 to 12
Erythronium americanum	Yellow	9 to 12
Crucianella stylosa	Pink	9 to 12
Primula denticulatum	Purple	9 to 12
Primula denticulatum album	White	9 to 12
Adonis vernalis	Bright yellow	9 to 12
Teucrium Chamædrys	Rosy purple	9 to 12
*Papaver nudicaule	Various	9 to 15
Daphne Cneorum	Rose pink	9 to 15
*Anchusa myosotidiflora	Blue	10 to 12
Euphorbia Cyparissias	Yellow	10 to 12
*Phlox divaricata canadensis	Lavender	10 to 12
Phlox divaricata alba grandiflora	White	10 to 12

MAY—*continued*

Name	*Color*	*Height in inches*
*Phlox divaricata Laphamii	Lavender	10 to 12
*Saxifraga megasea vars	Various	10 to 12
Alyssum saxatile compactum	Yellow	12
Bletia hyacinthina	Pink	12
Bletia hyacinthina alba	White	12
Campanula punctata	White, spotted rose	12
*Dianthus plumarius	Various	12
Orobus lathyroides	Blue	12
Orobus vernus	Purple	12
*Phlox carolina ovata	Magenta	12
Saxifraga umbrosa	White	12
*Aquilegia flabellata nana alba	White	12
*Caltha palustris and fl. pl.	Yellow	12 to 15
Dielytra formosa (eximia)	Pink	12 to 15
Phlox pilosa splendens	Rosy carmine	12 to 15
Corydalis nobilis	Pale yellow	12 to 15
Dicentra canadensis	White	12 to 15
Stellaria Holostea	White	12 to 15
Saxifraga crassifolia	Blush	12 to 15
*Incarvillea grandiflora	Light rose	12 to 15
Tiarella cordifolia	White	12 to 15
*Linum perenne album	White	12 to 18
Geranium Grievesi	Red	12 to 18
Æthionema grandiflora	Pink	12 to 18
*Aquilegia canadensis	Red and yellow	12 to 24
*Phlox Arendsii vars	Lavender shades	12 to 24
Podophyllum peltatum	White	12 to 24
*Tulips, late variety	Various	12 to 24
*Geum bulgaricum	Orange	15
*Geum coccineum Heldreichii, Mrs. Bradshaw	Scarlet	15
*Geum miniatum, Perry's	Orange	15
Iris amœna	Various	15 to 18
*Aquilegia formosa	Red and white	15 to 18
*Aquilegia glandulosa	Blue and white	15 to 18
Iris florentina	White, tinged lavender	15 to 18
Actæa alba	White	15 to 18
Actæ rubra	Deep rose	15 to 18
*Incarvillea Delavayi	Rose red	18
Lychnis Flos-cuculi	Light pink	18
*Aquilegia flabellata	Lilac	18
*Anthericum liliago	White	18
*Campanula grandis	Violet blue	18 to 20
Aquilegia akitensis	Blue and yellow	18 to 24
Doronicum Clusii	Yellow	18 to 24
*Mertensia virginica	Blue	18 to 24
Arisæma triphyllum	Purple	18 to 24
*Veronica gentianoides	Blue	18 to 24
Saxifraga peltata	Pink	18 to 24
Trollius, all vars	Yellow shades	18 to 24
Tradescantia virginica	Blue	18 to 30
Tradescantia virginica alba	White	18 to 30
*Dielytra spectabilis	Pink	20 to 24
Lindelofia longifolia	Blue	24
*Pæonia tenuifolia fl. pl.	Deep crimson	24
Polygonum sericeum	White	24
Ranunculus aconitifolius fl. pl.	Pure white	24
Ranunculus acris fl. pl.	Yellow	24
Saxifraga pyramidalis	White	24
*Anthericum liliastrum	White	24 to 30
*Pæonia officinalis rosea	Pink	24 to 30
*Pæonia officinalis rubra	Crimson	24 to 30
Amsonia tabernæmontana	Blue	24 to 30
*Aquilegia alpina	Blue and white	24 to 30
Doronicum excelsum	Yellow	24 to 30
*Lupinus polyphyllus and vars	Blue, pink, white	24 to 36
*Pæonia (herbaceous) sinensis (early)	various	24 to 36
*Polemonium cœruleum	Blue	24 to 36
*Polemonium cœruleum album	White	24 to 36
*Thalictum aquilegifolium	Purple	24 to 36
*Thalictum aquilegifolium album	White	24 to 36
*Hemerocallis, Gold Dust	Yellow	30
*Campanula medium	Various	30 to 36

MAY—*continued*

Name	*Color*	*Height in inches*
*Iris sibirica	Purple	30 to 36
*Iris sibirica alba	White	30 to 36
Iris versicolor	Purple and yellow	30 to 36
*Aquilegia vulgaris nivea	White	30 to 36
Polygonatum giganteum	Creamy	30 to 36
*Papaver orientale and vars	Salmon to maroon	30 to 40
*Pæonia Moutan (tree vars.)	Various	30 to 48
Podophyllum emodi majus	Pink	36
*Anchusa italica, Opal and Dropmore	Blue	36 to 60
Iris ochroleuca	Yellow	48
Iris Pseudacorus	Yellow	48

JUNE

Calystegia pubescens fl. pl	Pink	Trailing
Thymus lanuginosus	Lilac	Trailing
Thymus serpyllum	White	Trailing
Thymus serpyllum coccineum	Scarlet	Trailing
Thymus serpyllum splendens	Purple red	Trailing
Lithospermum prostratum var	Blue	Trailing
Lysimachia Nummularia	Yellow	Trailing
Sedum acre	Yellow	2 to 4
Sedum sexangulare	Yellow	2 to 4
Thymus citriodorus	Lilac	3 to 4
Veronica rupestris	Bright blue	3 to 4
Veronica rupestris alba	White	3 to 4
Viola pedata	Blue	3 to 4
Viola pedata bicolor	Purple and blue	3 to 4
Veronica Allionii	Gentian blue	3 to 5
Sedum Middendorfianum	Light yellow	3 to 5
Gypsophila cerastioides	White	3 to 6
Nepeta Mussinii	Lavender	4 to 6
Viola odorata	Blue	5 to 8
Globularia trichosanthes	Blue	5 to 8
Linum alpinum	Blue	5 to 8
Viola cornuta, all vars	Various	5 to 8
Asperula odorata	White	6 to 8
Cerastium tomentosum	White	6 to 8
Polemonium reptans	Blue	6 to 8
Sedum kamtschaticum	Yellow	6 to 8
Tunica saxifraga	Light pink	6 to 8
Oxytropis hybrida grandiflora	White	6 to 8
Papaver alpina	White	6 to 9
Sedum pulchellum	Pink	6 to 9
Iberis sempervirens and vars	White	6 to 9
Cerastium Biebersteinii	White	6 to 9
Myosotis alpestris alba	White	6 to 9
Myosotis alpestris, Victoria	Light blue	6 to 9
Dianthus deltoides	Pink	6 to 10
Dianthus deltoides alba	White	6 to 10
Armeria maritima splendens	Bright pink	6 to 12
Armeria maritima alba	White	6 to 12
Nierembergia rivularis	White	6 to 12
Veronica Teucrium	Blue	6 to 12
Potentilla pyrenaica	Yellow	6 to 12
Pulmonaria saccharata maculata	Blue	6 to 12
Ranunculus repens fl. pl	Golden yellow	6 to 12
Tiarella purpurea major	Salmon red	6 to 12
Hierracium aurantiacum rubrum	Orange red	6 to 24
Armeria Laucheana rosea	Rose	8 to 10
Armeria Laucheana alba	White	8 to 10
*Campanula carpatica	Blue	8 to 10
*Campanula carpatica alba	White	8 to 10
*Myosotis palustris semperflorens	Blue	8 to 10
Iberis gibraltarica	Lilac	8 to 12
*Lychnis grandiflora	Light yellow	8 to 12
Lychnis grandiflora alba	White	8 to 12
Epimedium diphyllum roseum	Rose	9
Epimedium pinnatum colchicum	Yellow	9
Saponaria ocymoides	Rosy red	9 to 12
*Campanula rotundifolia	Blue	9 to 12
Rhexia virginica	Rosy purple	9 to 12

JUNE—*continued*

Name	*Color*	*Height in inches*
Veronica spicata erica	Light pink	9 to 12
Teucrium chamædrys	Rosy purple	9 to 12
Fragaria indica	Yellow	9 to 15
Sempervivum atlanticum	Light rose	10 to 12
Sempervivum tectorum	Light rose	10 to 12
*Dianthus latifolius atrococcineus	Crimson	10 to 12
Dianthus plumarius vars.	Various	10 to 12
Achillea tomentosa	Yellow	12
Agrostemma Flos-Jovis	Deep pink	12
Alyssum rostratum	Yellow	12
Armeria formosa rosea	Pink	12
Armeria formosa alba	White blush	12
*Aster subcœruleus	Bluish violet	12
Bletia hyacinthina	Rosy pink	12
Bletia hyacinthina alba	White	12
Campanula punctata	White, spotted rose	12
*Phlox carolina ovata	Magenta	12
*Polemonium Richardsonii	Sky blue	12
Polemonium Richardsonii album	White	12
Saxifraga umbrosa	White	12
Geranium grandiflorum	Lilac blue	12
*Lychnis Viscaria fl. pl.	Red	12
Œnothera cæspitosa	White	12
*Œnothera missouriensis	Yellow	12
Orobus lathyroides	Bright blue	12
Orobus vernus	Purple	12
*Aquilegia flabellata nana alba	White	12
Sedum Maximowiczii	Yellow	12
Saponaria caucasica	Blush	12 to 15
Corydalis nobilis	Pale yellow	12 to 15
Stellaria Holostea	White	12 to 15
*Dracocephalum Ruyschiana	Purple	12 to 15
*Incarvillea grandiflora	Bright rose	12 to 15
Prunella grandiflora	Purple	12 to 15
*Stachys grandiflora superbum	Mauve	12 to 15
*Stachys grandiflora rosea	Purple	12 to 15
*Pentstemon Smallii	Rosy carmine	12 to 15
*Anemone pennsylvanica	White	12 to 15
Caltha palustris and vars.	Yellow	12 to 15
Potentilla, Miss Willmott	Cerise	12 to 15
Spigelia marilandica	Bright red	12 to 15
*Stachys lanata	Purple	12 to 15
Statice Gmelinii	Violet blue	12 to 15
Dielytra formosa (eximia)	Pink	12 to 15
*Lychnis Haageana	Orange scarlet	12 to 15
Erigeron glabellus	Violet purple	12 to 18
Linum perenne album	White	12 to 18
Coronilla varia	Pink and white	12 to 18
*Dianthus barbatus vars.	Various	12 to 18
*Mertensia virginica	Blue	12 to 18
Geranium Grievesi	Red	12 to 18
Linum narbonnense	Blue	12 to 18
Chamæirium luteum	Pale yellow	12 to 24
*Phlox Arendsii vars.	Lavender shades	12 to 24
Hieracium aurantiacum	Orange	12 to 24
*Hypericum calycinum	Yellow	12 to 24
*Anthemis tinctoria	Yellow	15
Anthemis tinctoria alba	White	15
Anthemis tinctoria pallida	Light yellow	15
Stachys Betonica grandiflora	Rose	15
Stachys Betonica rosea	Pale rose	15
Statice tatarica	Purple red	15
*Geum bulgaricum	Orange	15
*Geum miniatum, Perry's variety	Orange	15
Actæa alba	White	15 to 18
Actæa rubra	Deep rose	15 to 18
*Aquilegia formosa	Red and white	15 to 18
*Aquilegia glandulosa	Blue and white	15 to 18
*Veronica chamædrys	Blue	15 to 18
*Heuchera sanguinea alba	White	15 to 18
*Incarvillea Delavayi	Rose	15 to 18
Astrantia major	Pink	15 to 18

JUNE—*continued*

Name	*Color*	*Height in inches*
*Chrysanthemum leucanthemum fl. pl.	White	15 to 18
*Scabiosa caucasica	Blue	15 to 18
*Scabiosa caucasica alba	White	15 to 18
*Geum coccineum, Heldreichii, Mrs. Bradshaw	Scarlet	15 to 18
Marshallia trinervia	White	15 to 18
Statice eximia	Lilac	15 to 18
*Spiræa filipendula fl. pl.	White	15 to 18
Clematis integrifolia	Blue	15 to 20
*Anthericum liliago	White	18
*Achillea millefolium roseum	Pink	18
*Campanula grandis	Violet blue	18
*Statice latifolia	Purplish blue	18
Euphorbia corollata	White	18
Geranium platypetalum	Purple	18
Geranium sanguineum	Crimson	18
Geranium sanguineum album	White	18
Inula ensifolia	Yellow	18
Inula montana	Yellow	18
*Linum perenne	Blue	18
*Lychnis Flos-cuculi	Light pink	18
*Lychnis vespertina alba plena	White	18
*Œnothera speciosa	White	18
Œnothera Pilgrimii	Bright yellow	18
Veronica spicata alba	White	18
Veronica spicata rosea	Pink	18
Geranium Willardii	Rosy red	18
*Stokesia cyanea	Lavender	18 to 20
*Stokesia cyanea alba	White	18 to 20
Aquilegia haylodgensis	Pink	18 to 24
*Aruncus astilboides	White	18 to 24
*Lychnis coronaria alba	White	18 to 24
*Campanula latifolia nobilis	Purple	18 to 24
*Campanula latifolia nobilis alba	White	18 to 24
Amsonia salicifolia	Blue	18 to 24
Sedum Aizoon	Yellow	18 to 24
Silene virginica	Rose madder	18 to 24
Pentstemon diffusus	Purple	18 to 24
Aquilegia Skinnerii	Yellow and red	18 to 24
*Armeria cephalotes Ruby	Red	18 to 24
*Campanula glomerata superba	Violet blue	18 to 24
*Pyrethrum hybridum in variety	White to carmine	18 to 24
*Thalictrum adiantifolium	Creamy white	18 to 24
*Trollius, all vars	Yellow shades	18 to 24
*Hemerocallis Dumortierii	Buff yellow	18 to 24
Inula Royleana	Golden	18 to 24
*Veronica spicata	Blue	18 to 24
Erigeron mucronatus	Rose	18 to 24
Geum rivale	Red	18 to 24
Tradescantia virginica	Blue	18 to 30
Tradescantia virginica alba	White	18 to 30
Thalictrum glaucum	Bronze	20 to 24
*Veronica amethystina	Blue	20 to 24
*Campanula latifolius Van Houttei	Purple	20 to 30
*Aquilegia Helenæ	Blue and white	24
*Campanula Grossekii	Dark blue	24
*Delphinium sinensis	Blue	24
*Delphinium sinensis alba	White	24
Polygonum sericeum	White	24
Ranunculus aconitifolius	White	24
*Ranunculus acris fl. pl.	Golden yellow	24
Salvia Greggii	Carmine	24
Salvia Greggii alba	White	24
Saxifraga peltata	White	24
Valeriana coccinea	Rosy red	24
Valeriana coccinea alba	White	24
Erigeron intermedius	Blush white	24
Erigeron speciosus roseus	Pink	24
*Gaillardia grandiflora	Orange color	24
*Helenium Hoopesii	Orange yellow	24
*Campanula alliariæfolia	White	24
Iris Xiphium	Various	24 to 30
*Lychnis coronaria	Red	24 to 30

JUNE—*continued*

Name	*Color*	*Height in inches*
Amsonia Tabernæmontana	Blue	24 to 30
*Aquilegia alpina	Blue and white	24 to 30
Baptisia australis	Dark blue	24 to 30
Baptisia tinctoria	Yellow	24 to 30
*Campanula persicifolia	Blue	24 to 30
*Campanula persicifolia alba	White	24 to 30
Dictamnus fraxinella	Pink	24 to 30
Dictamnus fraxinella alba	White	24 to 30
Catananche cœrulea	Purple blue	24 to 30
*Pentstemon heterophyllus	Blue	24 to 30
*Spiræa chinensis	Pink	24 to 30
*Thalictrum aquilegifolium atropurpureum	Rosy purple	24 to 30
*Thalictrum aquilegifolium album	White	24 to 30
*Digitalis ambigua	Pale yellow	24 to 30
Lythrum alatum	Crimson purple	24 to 30
*Œnothera fruticosa Youngii	Yellow	24 to 30
*Polemonium cœruleum	Blue	24 to 36
*Polemonium cœruleum album	White	24 to 36
*Digitalis purpurea alba	White	24 to 36
*Aquilegia chrysantha	Yellow	24 to 36
Aquilegia chrysantha	White	24 to 36
*Aquilegia cœrulea	Blue	24 to 36
*Aquilegia hybrids	Various	24 to 36
*Clematis recta and fl. pl.	White	24 to 36
*Coreopsis lanceolata	Yellow	24 to 36
*Pentstemon Digitalis	White	24 to 36
Rosmarinus officinalis	Purple	24 to 36
Sidalcea candida	White	24 to 36
Sidalcea, Rose Queen	Rose pink	24 to 36
*Hemerocallis aurantiaca, major	Indian yellow	24 to 36
Inula glandulosa grandiflora	Yellow	24 to 36
*Lupinus polyphyllus vars.	Blue, white, pink	24 to 36
*Lychnis chalcedonica and fl. pl.	Orange scarlet	24 to 36
Monarda didyma and vars.	Pink to scarlet	24 to 36
*Papaver orientale, Perry's White	White	24 to 36
Digitalis lutea	Yellow	24 to 36
*Pæonia sinensis (herbaceous), late var	Various	24 to 42
*Campanula latifolia macrantha	Blue	30
*Hemerocallis, Gold Dust	Yellow	30
Anchusa sempervirens	Gentian blue	30 to 36
*Iris sibirica	Purple	30 to 36
Iris sibirica alba	White	30 to 36
*Iris versicolor	Yellow and purple	30 to 36
*Aquilegia vulgaris nivea	White	30 to 36
Œnothera glauca Fraseri	Yellow	30 to 36
Agrostemma coronaria	Crimson	30 to 36
*Delphinium formosum	Blue	30 to 36
Polygonatum giganteum	Creamy	30 to 36
Saxifraga peltata	Light pink	30 to 36
*Spiræa palmata	Crimson	30 to 36
*Spiræa Ulmaria fl. pl.	White	30 to 36
Thermopsis carolinianum	Yellow	30 to 36
*Hemerocallis flava	Lemon	30 to 36
*Hemerocallis aurantiaca	Indian yellow	30 to 40
*Papaver orientale, Goliath	Scarlet	30 to 40
*Papaver orientale, Mahogany	Maroon	30 to 40
*Papaver orientale, Mrs. Perry	Salmon	30 to 40
*Papaver orientale, Fire King	Red	30 to 40
*Papaver orientale, Queen Alexandra	Salmon	30 to 40
*Papaver orientale, Victoria Louise	Salmon	30 to 40
*Astilbe Arendsii Ceres	Pale pink	30 to 42
*Astilbe Arendsii, Pink Pearl	Pink	30 to 42
*Astilbe Arendsii, Salmon Queen	Salmon pink	30 to 42
*Astilbe Arendsii, Venus	Deep rose	30 to 42
*Astilbe Arendsii, Vesta	Lilac rose	30 to 42
*Iris Kaempferi in variety	Various	30 to 48
Pæonia Moutan (Tree Peony)	Various	30 to 48
*Delphinium, all varieties	Blue and lavender	30 to 60
*Aconitum Lycoctonum	Pale yellow	36
*Campanula Medium	Various	36
Campanula Trachelium	Purple	36
*Phlox suffruticosa, Miss Lingard	White	36 to 40

JUNE—*continued*

Name	*Color*	*Height in inches*
Hesperus matronalis	Purple	36 to 42
Hesperus matronalis albus	White	36 to 42
*Hemerocallis Florham	Golden yellow	36 to 42
*Hemerocallis luteola	Golden yellow	36 to 42
Asphodelus luteus	Orange	36 to 48
*Pentstemon barbatus, Torreyi	Scarlet	36 to 48
Valeriana officinalis	Blush pink	36 to 48
Funkia cœrulea	Blue	36 to 48
Yucca angustifolia	White or cream	36 to 48
Romneya Coulteri	White	36 to 48
*Galega officinalis	Blue	36 to 54
*Spiræa Aruncus	White	36 to 60
Iris ochroleuca	Pale yellow	48
*Iris Pseudacorus	Yellow	48
Aconitum uncinatum	Purple	48 to 54
*Spiræa venusta	Deep rose	48 to 54
Spiræa venusta magnifica	Deep red	48 to 54
*Astilbe Davidii	Rose violet	48 to 60
*Astilbe grandis	White	48 to 60
*Salvia uliginosa	Blue	48 to 60
*Digitalis gloxinæflora	Rose colors	48 to 60
*Hemerocallis fulva	Orange	48 to 60
Yucca filamentosa	Creamy white	48 to 60
*Lathyrus latifolius	Deep rose	48 to 72
Lathyrus latifolius albus	White	48 to 72
Aralia cachemirica	White	60 to 72
Cephalaria alpina	Sulphur	60 to 72
*Althæas	Various	60 to 84
*Eremurus robustus	White	72 to 96

JULY

Calystegia pubescens fl. pl	Pink	Trailing
Thymus lanuginosus	Lilac	Trailing
Thymus serpyllum album	White	Trailing
Thymus serpyllum coccineum	Scarlet	Trailing
Thymus serpyllum splendens	Purplish red	Trailing
Sedum album	White	Trailing
Sedum Middendorffianum	Sulphur yellow	Trailing
Sedum sexangulare	Yellow	Trailing
Sedum stoloniferum	Purplish pink	Trailing
Lithospermum prostratum and vars	Blue	Trailing
Gypsophila repens	White	Trailing
Thymus citriodorus	Lilac	3
Silene alpestris	White	3 to 5
Gypsophila cerastoides	White	3 to 6
Astilbe simplicifolia	White	4 to 6
Nepeta Mussinii	Lavender	4 to 6
Silene Schafta	Pink	4 to 6
Globularia trichosantha	Blue	5 to 8
Linum alpinum	Blue	5 to 8
Viola cornuta vars	Various	5 to 8
Sedum pulchellum	Pink	6 to 9
*Helianthemum vulgare aureum	Yellow	6 to 9
*Helianthemum vulgare, Bride	White	6 to 9
*Helianthemum vulgare, Ball of Fire	Red double	6 to 9
*Helianthemum vulgare, Mrs. Earle	Red double	6 to 9
*Helianthemum vulgare, Rosy Gem	Rose	6 to 9
*Helianthemum vulgare, macrantha	White	6 to 9
*Helianthemum vulgare, Sudberry Gem	Buff	6 to 9
Hypericum adpressum	Yellow	6 to 9
Callirhoe involucrata	Vivid crimson	6 to 9
*Dianthus deltoides	Pink	6 to 9
*Dianthus deltoides alba	White	6 to 9
*Helianthemum vulgare alba plena	White	6 to 9
Armeria maritima splendens	Pink	6 to 12
Armeria maritima alba	White	6 to 12
Nierembergia rivularis	White	6 to 12
Potentilla pyrenaica	Yellow	6 to 12
*Campanula carpatica	Blue	8
*Campanula carpatica alba	White	8
Armeria Laucheana rosea	Rose	8 to 10

JULY—*continued*

Name	*Color*	*Height in inches*
Armeria Laucheana alba	White	8 to 10
Artmesia pedemontana	Yellowish	8 to 10
Sempervivum hirtum	Yellow	8 to 10
*Myosotis palustris semperflorens	Blue	8 to 10
Lychnis grandiflora	Apricot	8 to 12
Lychnis grandiflora alba	White	8 to 12
Rhexia virginica	Rosy purple	9
Saponaria ocymoides	Rosy red	9 to 12
Scutellaria alpina	Purple	9 to 12
Veronica spicata erica	Pink	9 to 12
*Campanula rotundifolia	Blue	9 to 12
Lamium maculatum	Purple	9 to 12
*Papaver nudicaule	Various	9 to 15
Opuntia missouriensis	Yellow	10 to 12
Opuntia Rafinesquii	Yellow	10 to 12
Sempervivum atlanticum	Light rose	10 to 12
Sempervivum tectorum	Light rose	10 to 12
*Wahlenbergia vincæflora	Gentian blue	10 to 12
*Dianthus latifolius atrococcineus	Crimson	10 to 12
Armeria formosa rosea	Pink	12
Armeria formosa alba	Blush white	12
*Aster subcœruleus	Bluish violet	12
*Veronica incana	Bright blue	12
Sedum Maximowiczii	Yellow	12
Œnothera cæspitosa	White	12
Œnothera missouriensis	Yellow	12
Alyssum rostratum	Yellow	12
Statice Gmelini	Violet blue	12
*Polemonium Richardsonii	Blue	12
*Polemonium Richardsonii alba	White	12
*Dianthus plumarius, "White Reserve"	White	12
Agrostemma Flos-Jovis	Deep pink	12 to 15
*Anemone pennsylvanica	White	12 to 15
*Aster amellus, King George	Blue	12 to 15
*Aster amellus, Perry's Favorite	Rose	12 to 15
Saponaria caucasica	Blush	12 to 15
Dianthus cinnabarium	Magenta	12 to 15
Prunella grandiflora	Purple	12 to 15
*Stachys grandiflora superba	Mauve	12 to 15
*Stachys grandiflora rosea	Purple	12 to 15
Teucrium canadense	Light purple	12 to 15
Erodium Manescavii	Red	12 to 15
Spigelia marilandica	Bright red	12 to 15
Santolina incana	Yellow	12 to 15
*Pentstemon Smallii	Carmine	12 to 15
*Phlox Arendsii Amanda	Lilac	12 to 15
Polygonum Brunonis	Bright rose	12 to 15
Potentilla, Miss Willmott	Cerise	12 to 15
*Lychnis Haageana	Orange scarlet	12 to 15
Dielytra formosa	Pink	12 to 15
Eryngium maritimum	Pale blue	12 to 15
Funkia minor alba	White	12 to 15
Geranium grandiflorum	Pale lilac	12 to 15
*Dracocephalum Ruyschiana	Purple	12 to 15
Calimeris incisa	Pale lavender	12 to 18
Erigeron glabellus	Violet purple	12 to 18
*Linum perenne album	White	12 to 18
Linum narbonnense	Blue	12 to 18
*Tricyrtis hirta	Deep orange	12 to 18
*Lilium elegans, Vanhouttei	Crimson	12 to 18
Coronilla varia	Pink and white	12 to 18
*Hypericum calycinum	Yellow	18 to 24
Chamælirium luteum	Cream yellow	12 to 24
*Anthemis tinctoria	Yellow	15
*Anthemis tinctoria alba	White	15
*Anthemis tinctoria pallida	Pale yellow	15
*Stachys Betonica grandiflora	Soft rose	15
*Stachys Betonica rosea	Pale rose pink	15
*Statice eximia	Lilac	15
Statice tatarica	Reddish purple	15
*Geum bulgaricum	Orange	15
*Geum miniatum, Perry's Variety	Orange	15

JULY—*continued*

Name	*Color*	*Height in inches*
Aster acris	Violet blue	15 to 18
*Aster ptarmicoides	White	15 to 18
Aster Thomsonii	Clear blue	15 to 18
*Platycodon Mariesii	Blue	15 to 18
Sedum Telephium	Rosy white	15 to 18
Statice Limonium	Purple blue	15 to 18
*Spiræa filipendula fl. pl.	White	15 to 18
*Phlox Arendsii, Greta	White	15 to 18
*Phlox Arendsii, Helene	Lavender blue	15 to 18
Potentilla formosa	Red	15 to 18
*Scabiosa caucasica	Blue	15 to 18
*Scabiosa caucasica alba	White	15 to 18
Solidago Virguarea compacta	Deep yellow	15 to 18
Marshallia trinervia	White	15 to 18
*Chrysanthemum leucanthemum fl. pl.	White	15 to 18
*Geum coccineum Heldreichii, Mrs. Bradshaw	Scarlet	15 to 18
*Heuchera sanguinea alba	White	15 to 18
Achillea millefolium roseum	Pink	18
Statice latifolia	Purplish blue	18
Veronica spicata	Blue	18
Veronica spicata alba	White	18
Veronica spicata rosea	Pink	18
Œnothera Pilgrimii	Yellow	18
Œnothera speciosa	White	18
Pentstemon pubescens	Rosy puple	18
Salvia virgata nemorosa	Dark blue	18
Inula ensifolia	Yellow	18
Inula montana	Yellow	18
Lavendula vera	Lavender blue	18
Lilium tenuifolium	Bright scarlet	18
Linum perenne	Blue	18
Lynchnis vespertina alba plena	White	18
Campanula glomerata	Violet blue	18
Centaurea dealbata	Bright rose	18
Euphorbia corollata	White	18
Geranium sanguineum	Crimson	18
Geranium sanguineum album	White	18
Helenium pumilum magnificum	Golden yellow	18
Stokesia cyanea	Lavender blue	18 to 20
Stokesia cyanea alba	White	18 to 20
Armeria cephalotes, Ruby	Red	18 to 24
Dracocepnalum grandiflorum	Blue	18 to 24
Campanula rapunculoides	Blue	18 to 24
Aruncus astilboides	White	18 to 24
Lychnis coronaria alba	White	18 to 24
Alyssum argentum	Yellow	18 to 24
Campanula latifolia nobilis	Purple	18 to 24
Campanula latifolia nobilis alba	White	18 to 24
Sedum Aizoon	Yellow	18 to 24
Silene virginica	Rose madder	18 to 24
Thalictrum adinatifolium	Creamy white	18 to 24
Veronica longifolia subsessilis	Deep blue	18 to 24
Vincetoxicum japonicum	Creamy white	18 to 24
Centaurea ruthenica	Yellow	18 to 24
Pentstemon grandiflora	Lilac blue	18 to 24
Matricaria, Little Gem	White	18 to 24
Phlox Arendsii, Charlotte	Pinkish lilac	18 to 24
Phlox Arendsii Kathe	Rose purple	18 to 24
Physalis Franchetii	Red fruits	18 to 24
Potentilla atrosanguinea	Crimson	18 to 24
Potentilla Vulcan	Maroon	18 to 24
Scabiosa japonica	Lavender blue	18 to 24
Senecio pulcher	Rosy purple	18 to 24
Heuchera brizoides	Crimson	18 to 24
Heuchera sanguinea	Coral red	18 to 24
Heuchera sanguinea alba	Creamy white	18 to 24
Heuchera Virginal	White	18 to 24
Hypericum Moserianum	Yellow	18 to 24
Inula royleana	Yellow	18 to 24
Campanula glomerata superba	Violet blue	18 to 24
Centaurea hirta nigra variegata	Purple	18 to 24
Chelone glabra alba	Creamy white	18 to 24

JULY—*continued*

Name	*Color*	*Height in inches*
Chelone Lyonii	Rosy red	18 to 24
Tradescantia virginica	Blue	18 to 30
Tradescantia virginica alba	White	18 to 30
Trollius, all varieties	Yellow shades	18 to 30
Montbretias, all varieties	Various	18 to 30
Phlox decussata vars.	Various	18 to 42
Thalictrum glaucum	Bronze	20 to 24
Centaurea montana	Violet blue	20 to 24
Centaurea montana alba	White	20 to 24
Coreopsis verticillata	Yellow	20 to 24
Funkia undulata variegata	Lilac	20 to 24
Saponaria officinalis	Blush	20 to 30
*Achillea filipendula	Yellow	24
*Achillea Ptarmica fl. pl. and vars.	White	24
Alstromeria chilensis	Orange	24
*Campanula latifolia, Van Houttei	Purple	24
Lycoris squamigera	Pink	24
Spiræa chinensis	Silvery pink	24
Valeriana coccinea	Rosy red	24
Valeriana coccinea alba	White	24
*Veronica amethystina	Blue	24
*Veronica maritima	Light blue	24
*Campanula alliariæfolia	White	24
Pentstemon puniceus	Scarlet	24
*Pentstemon gloxinoides hybrids	Various	24
*Phlox Arendsii, Louise	Lilac, dark eye	24
*Platycodon grandiflorum	Deep blue	24
*Platycodon grandiflorum album	White	24
Salvia Greggii	Carmine	24
Salvia Greggii alba	White	24
*Heliopsis Pitcheriana semi-plena	Yellow	24
Lysimachia ciliata	Yellow	24
Lysimachia clethroides	White	24
Lythrum alatum	Crimson purple	24
*Campanula Grossekii	Dark blue	24
*Campanula persicifolia	Blue	24
*Campanula persicifolia alba	White	24
*Chrysanthemum, Shasta Daisy "Alaska"	White	24
*Delphinium sinensis	Blue	24
*Delphinium sinensis alba	White	24
Eomecon chionantha	White	24
Erigeron intermedium	Blush white	24
Erigeron speciosus roseus	Pink	24
*Gaillardia grandiflora	Orange shades	24
Geranium Fremontii	Rosy purple	24
Œtheopappus pulcherrimus	Rose pink	24 to 30
*Lychnis coronaria	Red	24 to 30
*Rudbeckia speciosa	Yellow and brown	24 to 30
*Pentstemon heterophyllus	Blue	24 to 30
Erynigium planum	Steel blue	24 to 30
Œnothera fruticosa Youngii	Yellow	24 to 30
Heliopsis scabra zinniæflora	Deep yellow	24 to 30
*Campanula lactiflora alba magnifica	White	24 to 30
*Campanula lactiflora cœrulea	Pale blue	24 to 30
Dictamnus fraxinella	Rosy pink	24 to 30
Dictamnus fraxinella alba	White	24 to 30
Erynigium amethystinum	Blue	24 to 30
Funkia Fortunei	Lilac	24 to 30
Funkia robusta elegans	Mauve	24 to 30
*Digitalis purpurea alba	White	24 to 36
*Polemonium cœruleum	Blue	24 to 36
*Polemonium cœruleum album	White	24 to 36
*Thalictrum aquilegifolium atropurpureum	Rosy purple	24 to 36
*Thalictrum aquilegifolium album	White	24 to 36
*Digitalis lutea	Yellow	24 to 36
Monarda didyma	Crimson	24 to 36
Monarda didyma rosea	Deep rose	24 to 36
Monarda didyma salmonea	Deep salmon rose	24 to 36
Monarda didyma violacea	Amaranth	24 to 36
Monarda fistulosa alba	White	24 to 36
*Pentstemon Digitalis	White	24 to 36
Rosmarinus officinalis	Purple	24 to 36

JULY—*continued*

Name	*Color*	*Height in inches*
Sidalcea candida	White	24 to 36
*Sidalcea, Rose Queen	Rose	24 to 36
*Hemerocallis aurantiaca major	Yellow	24 to 36
*Lilium canadense	Red and orange	24 to 36
*Lobelia syphilitica	Blue and white	24 to 36
*Lychnis chalcedonica	Orange scarlet	24 to 36
Lysimachia punctata	Yellow	24 to 36
*Clematis recta and fl. pl.	White	24 to 36
*Coreopsis lanceolata grandiflora	Yellow	24 to 36
*Digitalis ambigua	Pale yellow	24 to 36
*Digitalis lanata	Brown and white	24 to 36
*Echinops Ritro	Metallic blue	24 to 36
*Lilium auratum	White and gold	24 to 48
*Lilium candidum	White	24 to 48
*Lilium Thunbergiana	Yellow and red	24 to 48
*Dahlias, in variety	Various	24 to 84
Agrostemma coronaria	Crimson	30
Agrostemma coronaria alba	White	30
Asclepias tuberosa	Orange	30
Pardanthus sinensis	Orange	30
*Asclepias incarnata rosea	Flesh pink	30 to 36
*Lilium longiflorum	White	30 to 36
Œnothera glauca Fraseri	Yellow	30 to 36
*Salvia farinacea	Blue	30 to 36
*Spiræa palmata	Crimson purple	30 to 36
*Spiræa palmata elegans	Silvery pink	30 to 36
*Spiræa ulmaria fl. pl.	White	30 to 36
*Spiræa lobata	Pink	30 to 36
*Hemerocallis flava	Lemon yellow	30 to 36
*Campanula Trachelium	Purple	30 to 36
*Delphinium formosum	Blue	30 to 36
*Astilbe Arendsii and vars.	Pink shades	30 to 42
Solidago rigida	Orange yellow	30 to 42
*Gladioli in variety	Various	30 to 48
Rodgersia tabularis	Yellow foliage	30 to 48
Cassia marilandica	Yellow	30 to 48
*Delphiniums, all vars.	Shades of blue	30 to 60
*Aconitum Lycoctonum	Pale yellow	36
Thermopsis caroliniana	Yellow	36
*Tritoma Saundersii	Coral red	36
*Phlox, Miss Lingard	White	36
*Rudbeckia Newmannii	Orange yellow	36
Solidago Shortii	Golden yellow	36
*Heliopsis Pitcheriana	Yellow	36
Heliopsis scabra excelsa	Yellow	36
*Lilium umbellatum	Scarlet	36
*Lilium Martagon	Purple	36
*Lilium Martagon album	Pure white	36
Lythrum virgatum	Rosy purple	36
Gillenia trifoliata	White	36
Hesperus matronalis	Purple	36 to 42
Hesperus matronalis albus	White	36 to 42
*Rudbeckia purpurea	Reddish purple	36 to 42
*Hemerocallis Florham	Golden yellow	36 to 42
*Hemerocallis luteola	Yellow	36 to 42
Centaurea macrocephala	Yellow	36 to 42
Echinops sphærocephalus	Bluish white	36 to 42
Asphodelus luteus	Orange	36 to 48
*Lilium Brownii	Blush	36 to 48
Valeriana coccinea alba	Blush pink	36 to 48
*Veronica virginica	White	36 to 48
Yucca angustifolia	White	36 to 48
*Pentstemon barbatus Torreyi	Scarlet	36 to 48
Rodgersia tabularis	Yellow foliage	36 to 48
*Romneya Coulteri	White	36 to 48
*Hemerocallis aurantiaca	Yellow	36 to 48
*Hemerocallis Thunbergii	Yellow	36 to 48
*Liatris scariosa	Purple	36 to 48
*Lilium tigrinum	Orange	36 to 48
*Lilium Batemanniæ	Yellow	36 to 48
*Lilium croceum	Deep orange	36 to 48
*Lilium Hansonii	Yellow, spotted black	36 to 48
*Lilium chalcedonicum	Scarlet	36 to 48

JULY—*continued*

Name	*Color*	*Height in inches*
*Lythrum roseum superbum	Rose pink	36 to 48
*Lythrum roseum, Perry's variety	Cherry red	36 to 48
Solidago juncea	Yellow	36 to 54
*Galega officinalis	Blue	36 to 54
*Anchusa italica vars	Blue	36 to 60
*Spiræa Aruncus	White	36 to 60
Senecio Wilsonianus	Bright yellow	36 to 60
*Cimicifuga racemosa	White	36 to 60
*Physostegia virginica alba	White	40 to 50
*Lilium maculatum	Orange	42 to 48
*Helianthus multiflorus fl. pl	Yellow	48
*Aconitum uncinatum	Purple	48 to 54
Achillea Eupatorium	Yellow	48 to 60
*Astilbe Davidii	Rose violet	48 to 60
*Astilbe grandis	White	48 to 60
*Lythrum Salicaria	Purple	48 to 60
Spiræa venusta magnifica	Intense red	48 to 60
Yucca filamentosa	White	48 to 60
*Physostegia virginica	Soft pink	48 to 60
*Rudbeckia maxima	Bright yellow	48 to 60
*Salvia uliginosa	Blue	48 to 60
Solidago canadensis	Yellow	48 to 60
*Hemerocallis fulva	Orange	48 to 60
*Hemerocallis Kwanso fl. pl	Deep orange	48 to 60
*Lilium testaceum	Yellow	48 to 60
*Digitalis gloxinæflora	Rose colors	48 to 60
*Lathyrus latifolius	Deep rose	48 to 72
*Lathyrus latifolius albus	White	48 to 72
*Lilium superbum	Orange	48 to 72
Hibiscus Mallows	White to maroon	48 to 84
Helianthus rigidus japonicus	Yellow	50 to 60
*Liatrus pycnostachya	Purple red	60
*Rudbeckia laciniata fl. pl	Golden yellow	60 to 72
*Helianthus multiflorus maximus	Yellow	60 to 72
*Althæas	Various	60 to 84
Bocconia cordata	Creamy white	60 to 84
*Eremurus robustus	White	72 to 96

AUGUST

Gypsophila repens	Rosy purple	Trailing
Lithospermum prostratum and vars	Blue	Trailing
Sedum album	White	Trailing
Sedum Ewersii	Pink	Trailing
Sedum stolonfera	Purplish pink	Trailing
Calystegia pubescens fl. pl	Pink	Trailing
Gypsophila cerastoides	White	3
Silene alpestris	White	4
Silene Schafta	Pink	4 to 6
*Colchicum autumnale	Various	5 to 8
*Globularia trichosantha	Blue	5 to 8
Linum alpinum	Blue	5 to 8
Viola cornuta vars	Various	5 to 8
Callirhoe involucrata	Rosy crimson	6
Sedum spurium	Pink	6
Sedum spurium coccineum	Crimson	6
Plumbago Larpentæ	Deep blue	6 to 8
Helianthemum, all vars	Various	6 to 9
Hypericum adpressum	Yellow	6 to 9
Sedum Sieboldii	Bright pink	6 to 9
Tunica saxifraga	Bright pink	6 to 9
Lotus corniculatus fl. pl	Yellow	6 to 9
Armeria maritima splendens	Pink	6 to 12
Armeria maritima alba	White	6 to 12
Nierembergia rivularis	White	6 to 12
Myosotis palustris semperflorens	Blue	8 to 10
Artemisia pedemontana	Yellowish	9
Rhexia virginica	Rosy purple	9
Scutellaria alpina	Purple	9 to 12
Lamium maculatum	Purple	9 to 12
*Papaver nudicaule	Various	9 to 15
Anemone hupehensis	Rosy mauve	10 to 12
*Dianthus latifolius atrococcineus	Crimson	10 to 12

AUGUST—*continued*

Name	*Color*	*Height in inches*
Opuntia missouriensis	Yellow	10 to 12
Opuntia Rafinesquii	Yellow	10 to 12
Wahlenbergia vincæflora	Gentian blue	10 to 12
Geranium grandiflorum	Pale lilac	12
Œnothera cæspitosa	White	12
Œnothera missouriensis	Yellow	12
Satureia montana	White	12
Statice Gmelini	Violet blue	12
Veronica incana	Bright blue	12
*Anemone pennsylvanica	White	12 to 15
*Aster Amellus and vars	Various	12 to 15
Coreopsis rosea	Pale pink	12 to 15
Dielytra formosa	Pink	12 to 15
Eryngium maritimum	Pale blue	12 to 15
Potentilla, Miss Willmott	Cerise	12 to 15
Spigelia marilandica	Bright red	12 to 15
Saponaria caucasica	Blush	12 to 15
Dianthus cinnabarinus	Magenta	12 to 15
Calimeris incisa	Pale lavender	12 to 18
*Linum perenne album	White	12 to 18
*Tricyrtis hirta	Orange	12 to 18
Hieracium aurantiacum	Orange	12 to 24
Hieracium aurantiacum rubrum	Orange red	12 to 24
*Phlox Arendsii var	Lavender shades	12 to 24
*Hypericum calycinum	Yellow	12 to 24
*Anthemis tinctoria	Yellow	15
*Anthemis tinctoria alba	White	15
*Anthemis tinctoria pallida	Pale yellow	15
*Aster acris	Violet blue	15
*Aster ptarmicoides	White	15
*Geum bulgaricum	Orange	15
Marshallia trinervis	White	15
Polygonum compactum	White	15
Sedum japonicum macrophyllum	White	15
Solidago Virgaurea compacta	Deep yellow	15
*Statice eximia	Lilac	15
Statice tatarica	Reddish purple	15
*Aster Thomsonii	Blue	15 to 18
Potentilla formosa	Red	15 to 18
*Scabiosa caucasica	Blue	15 to 18
*Scabiosa caucasica alba	White	15 to 18
Sedum spectabile	Rose	15 to 18
*Sedum spectabile, Brilliant	Amaranth red	15 to 18
*Platycodon Mariesii	Blue	15 to 18
Sedum Telephium	Rosy white	15 to 18
Statice Limonium	Purple blue	15 to 18
*Heuchera sanguinea alba	White	15 to 18
Solidago nemoralis	Yellow	15 to 18
*Phlox decussata var	Various	15 to 42
*Achillea millefolium roseum	Deep pink	18
Artemisia stelleriana	Yellow	18
*Centaurea dealbata	Bright rose	18
Euphorbia corollata	White	18
Geranium sanguineum	Crimson	18
Geranium sanguineum album	White	18
*Helenium pumilum magnificum	Golden yellow	18
Inula ensifolia	Yellow	18
Inula montana	Yellow	18
*Linum perenne	Blue	18
*Lychnis vespertina alba plena	White	18
Lysimachia Fortunei	White	18
Œnothera Pilgrimii	Yellow	18
*Œnothera speciosa	White	18
*Salvia virgata nemorosa	Dark blue	18
*Statice latifolia	Purplish blue	18
Anemonopsis macrophylla	Violet	18 to 24
Armeria cephalotes, Ruby	Red	18 to 24
*Campanula glomerata superba	Violet blue	18 to 24
Centaurea hirta nigra variegata	Purple	18 to 24
Chelone glabra alba	Creamy white	18 to 24
*Chelone Lyonii	Rosy red	18 to 24
*Eupatorium cœlestinum	Blue	18 to 24

AUGUST—*continued*

Name	*Color*	*Height in inches*
*Heuchera brizoides	Crimson	18 to 24
*Heuchera sanguinea	Coral red	18 to 24
*Heuchera sanguinea alba	White	18 to 24
Heuchera Virginal	Creamy white	18 to 24
*Hypericum Moserianum	Yellow	18 to 24
Inula royleana	Golden yellow	18 to 24
*Matricaria, Little Gem	White	18 to 24
Potentilla atrosanguinea	Crimson	18 to 24
Potentilla Vulcan	Maroon	18 to 24
*Scabiosa japonica	Lavender blue	18 to 24
Senecio pulcher	Rosy purple	18 to 24
*Stokesia cyanea	Lavender blue	18 to 24
*Stokesia cyanea alba	White	18 to 24
*Lychnis coronaria alba	White	18 to 24
Alyssum argenteum	Yellow	18 to 24
Sedum Aizoon	Yellow	18 to 24
*Veronica longifolia subsessilis	Deep blue	18 to 24
*Montbretias in variety	Various	18 to 30
Tradescantia virginica	Blue	18 to 30
Tradescantia virginica alba	White	18 to 30
Saponaria officinalis	Blush	20 to 30
Rudbeckia fulgida	Orange	20 to 30
Solidago caesia	Yellow	20 to 30
*Achillea Ptarmica fl. pl. and vars	White	24
Alstrœmeria chilensisi	Orange	24
Artemisia Abrotanum	Yellowish	24
*Boltonia latisquama nana	Pink	24
*Campanula Grossekii	Dark blue	24
*Centaurea montana	Violet blue	24
*Centaurea montana alba	White	24
*Coreopsis verticillata	Yellow	24
Eomecon chionantha	White	24
Erigeron speciosus roseus	Rosy pink	24
*Gaillardia grandiflora	Orange shades	24
*Gentiana Andrewsii	Blue	24
Geranium Fremontii	Rosy purple	24
*Heliopsis Pitcheriana	Golden yellow	24
Lysimachia clethroides	White	24
*Lythrum alatum	Crimson purple	24
*Pentstemon gloxinoides	Various	24
Salvia Greggii	Carmine	24
Salvia Greggii alba	White	24
Valeriana coccinea	Rosy red	24
Valeriana coccinea alba	White	24
Aster spectabilis	Purple	24
Eupatorium Fraseri	White	24
*Pentstemon puniceus	Scarlet	24
Veronica maritima	Light blue	24
*Clematis Davidiana	Light blue	24 to 30
Eryngium amethystinum	Blue	24 to 30
Heliopsis scabra zinniæflora	Deep yellow	24 to 30
*Lobelia cardinalis	Red	24 to 30
Lysimachia punctata	Yellow	24 to 30
*Platycodon grandiflorum	Blue	24 to 30
*Platycodon grandiflorum album	White	24 to 30
*Lychnis coronaria	Red	24 to 30
*Rudbeckia speciosa	Yellow and brown	24 to 30
*Eryngium planum	Steel blue	24 to 30
*Pentstemon heterophyllus	Blue	24 to 30
*Coreopsis lanceolata grandiflora	Yellow	24 to 36
*Digitalis lanata	Brown and white	24 to 36
*Echinops Ritro	Metallic blue	24 to 36
*Gypsophila panculata and fl. pl.	White	24 to 36
*Lobelia syphilitica	Blue and white	24 to 36
Monarda didyma and vars	Various	24 to 36
Monarda fistulosa alba	White	24 to 36
*Lilium auratum	White and gold	24 to 48
*Delphiniums in variety	Various	24 to 60
*Dahlias in variety	Various	24 to 84
Asclepias tuberosa	Orange	30
*Aster Feltham Blue	Blue	30
*Campanula lactiflora alba	White	30

AUGUST—*continued*

Name	*Color*	*Height in inches*
*Campanula lactiflora cærulea	Blue	30
Clematis heracleæfolia	Pale blue	30
*Cimicifuga japonica	White	30
*Eupatorium purpureum	Reddish purple	30
Pardanthus sinensis	Orange	30
*Rudbeckia subtomentosa	Lemon yellow	30
*Tritoma tricolor	Red, yellow, and white	30
Funkia subcordata	White	30 to 36
Œnothera glauca Fraseri	Yellow	30 to 36
*Salvia farinacea	Blue	30 to 36
*Tritoma Pfitzerii	Orange scarlet	30 to 42
Solidago rigida	Orange yellow	30 to 42
Vernonia arkansana	Purple	30 to 42
*Gladioli in variety	Various	30 to 48
Acanthus mollis latifolius	Orange foliage	36
*Aconitum napellus bicolor	Blue and white	36
*Asclepias incarnata rosea	Flesh pink	36
*Helenium Riverton Beauty	Bronzy red	36
*Heliopsis Pitcheriana	Golden yellow	36
Heliopsis scabra excelsa	Chrome	36
*Lilium speciosum	White	36
*Lilium speciosum rubrum	Deep rose	36
*Lilium speciosum melpomene	Crimson purple	36
*Lythrum virgatum	Rosy purple	36
*Phlox, Miss Lingard	White	36
*Rudbeckia Newmannii	Orange yellow	36
*Rudbeckia purpurea	Reddish purple	36
Solidago Shortii	Golden yellow	36
*Tritoma Pfitzerii	Coral red	36
*Aconitum napellus	Dark blue	36 to 42
Centaurea macrocephala	Yellow	36 to 42
Echinops sphærocephalus	Bluish white	36 to 42
*Eupatroium ageratoides	White	36 to 42
Cassia marilandica	Yellow	36 to 48
*Helenium autumnale rubrum	Bronze red	36 to 48
*Hemerocallis Thunbergii	Yellow	36 to 48
*Liatris scariosa	Purple	36 to 48
*Lilium Batemanniæ	Yellow	36 to 48
*Lythrum roseum superbum	Rose	36 to 48
*Lythrum roseum, Perry's variety	Cherry red	36 to 48
*Pentstemon barbatus Torreyi	Scarlet	36 to 48
*Salvia azurea	Sky blue	36 to 48
*Salvia Pitcherii	Bright blue	36 to 48
Artemisia vulgaris	White	36 to 48
*Lilium Browni	Blush	36 to 48
Veronica virginica	White	36 to 48
*Lilium tigrinum	Reddish orange	36 to 54
Solidago juncea	Yellow	36 to 54
*Cimicifuga racemosa	White	36 to 60
Polygonum cuspidatum	White	36 to 60
*Romneya Coulteri	White	36 to 60
Senecio clivorum	Yellow	36 to 60
Senecio Wilsonianus	Bright yellow	36 to 60
*Thalictrum diptcrocarpum	Mauve	36 to 60
*Physostegia virginica alba	White	40 to 50
Artemisia lactiflora	Creamy white	42 to 54
*Helenium Riverton Gem	Lemon yellow	48
*Helianthus mollis	Lemon yellow	48
Helianthus multiflorus fl. pl	Golden yellow	48
*Aconitum uncinatum	Purple	48 to 54
*Achillea eupatorium	Yellow	48 to 60
*Aster N. B. Climax	Clear lavender	48 to 60
*Boltonia latisquama	Pink	48 to 60
*Hemerocallis Kwanso fl. pl	Deep orange	48 to 60
*Lilium Henryii	Orange yellow	48 to 60
*Physostegia virginica	Soft pink	48 to 60
Solidago canadensis	Yellow	48 to 60
Stenanthium robustum	White	48 to 60
*Lythrum salicaria	Purple	48 to 60
*Campanula pyramidalis	Blue	48 to 72
*Campanula pyramidalis alba	White	48 to 72
Salvia uliginosa	Blue	48 to 72

AUGUST—*continued*

Name	*Color*	*Height in inches*
Hibiscus Mallows	Various	48 to 84
*Boltonia asteroides	White	54 to 72
Rudbeckia nitidus	Primrose yellow	54 to 72
*Liatris pycnostachya	Rosy purple	60
Helianthus multiflorus maximus	Golden yellow	60 to 72
*Helianthus Wolley Dod	Deep yellow	60 to 72
Rudbeckia laciniata fl. pl.	Yellow	60 to 72
Bocconia cordata	Lavender	60 to 84
*Lilium pardalinum	Orange	60 to 84
Silphium perfoliatum	Yellow	60 to 84

SEPTEMBER

Lithospermum prostratum and vars	Blue	Trailing
Sedum Ewersii	Pink	Trailing
Silene Schafta	Pink	4 to 6
*Colchicum autumnale	Various	5 to 8
*Viola cornuta vars	Various	5 to 8
Sedum spurium	Pink	6
Sedum spurium coccineum	Crimson	6
Callirhoe involucrata	Rosy crimson	6 to 8
Plumbago Larpentæ	Deep blue	6 to 8
Helianthemum, all vars	Various	6 to 9
Sedum Sieboldii	Bright pink	6 to 9
Armeria maritima splendens	Pink	6 to 12
Armeria maritima alba	White	6 to 12
Nierembergia rivularis	White	6 to 12
*Campanula carpatica	Blue	8
*Campanula carpatica alba	White	8
Myosotis palustris semperflorens	Blue	8 to 10
Rhexia virginica	Rosy purple	9
Scutellaria alpina	Purple	9 to 12
*Papaver nudicaule	Various	9 to 15
Anemone hupehensis	Mauve rose	10 to 12
*Dianthus latifolius atrococcineus	Crimson	10 to 12
Wahlenbergia vincæflora	Gentian blue	10 to 12
Coreopsis rosea	Pale pink	12
*Dianthus plumarius, White Reserve	White	12
Œnothera missouriensis	Yellow	12
Polygonum Brunonis	Bright rose	12
Satureia montana	White	12
Statice Gmelini	Violet blue	12
Saponaria caucasica	Blush	12 to 15
*Eryngium maritimum	Pale blue	12 to 15
Spigelia marilandica	Bright red	12 to 15
Cunila mariana	Lilac	12 to 15
Calimeris incisa	Pale lavender	12 to 18
*Gentiana alba	White	12 to 18
*Phlox Arendsii vars	Lavender shades	12 to 24
*Anthemis tinctoria	Yellow	15
*Anthemis tinctoria alba	White	15
*Anthemis tinctoria pallida	Pale yellow	15
*Chrysanthemum arcticum	White	15
*Geum bulgaricum	Orange	15
Polygonium compactum	White	15
Sedum japonicum macrophyllum	White	15
Sedum maximum atropurpureum	Bronzy rose	15
Solidago Virgaurea compacta	Deep yellow	15
Statice eximia	Lilac	15
Statice tatarica	Reddish purple	15
Platycodon Mariesii	Blue	15 to 18
*Heuchera sanguinea alba	White	15 to 18
Solidago nemoralis	Yellow	15 to 18
*Geum, Mrs. Bradshaw	Scarlet	15 to 18
*Geum Heldreichii	Scarlet	15 to 18
*Scabiosa caucasica	Blue	15 to 18
*Scabiosa caucasica alba	White	15 to 18
*Sedum spectabile	Rose	15 to 18
*Sedum spectabile, Brilliant	Amaranth red	15 to 18
*Achillea Millefolium roseum	Pink	18
*Aconitum Fischeri	Pale blue	18
*Aster Snowflake	White	18

SEPTEMBER—*continued*

Name	*Color*	*Height in inches*
Centaurea dealbata	Bright rose	18
Geranium sanguineum	Crimson	18
Geranium sanguineum album	White	18
*Helenium pumilum magnificum	Golden yellow	18
*Linum perenne	Blue	18
*Lychnis vespertina alba plena	White	18
*Œnothera speciosa	White	18
*Statice latifolia	Purplish blue	18
Aster patens	Bluish purple	18 to 24
*Anemone japonica rubra	Rosy red	18 to 24
Chelone glabra alba	Creamy white	18 to 24
*Chelone Lyonii	Rosy red	18 to 24
*Eupatorium cœlestinum	Light blue	18 to 24
*Hypericum Moserianum	Yellow	18 to 24
*Matricaria, Little Gem	White	18 to 24
Physalis Franchetii	Orange red fruit	18 to 24
*Scabiosa japonica	Lavender blue	18 to 24
Senecio pulcher	Rosy purple	18 to 24
*Stokesia cyanea	Lavender blue	18 to 24
*Stokesia cyanea alba	White	18 to 24
Tradescantia virginica	Blue	18 to 30
Tradescantia virginica alba	White	18 to 30
*Phlox decussata	Various	18 to 42
Saponaria officinalis	Blush	20 to 30
Solidago cæsia	Yellow	20 to 30
*Rudbeckia fulgida	Orange	20 to 30
*Aster spectabilis	Purple	24
Alstrœmeria chilensis	Orange	24
Artemisia Abrotanum	Yellowish	24
*Boltonia latisquama nana	Pink	24
*Campanula Grossekii	Dark blue	24
*Centaurea montana	Violet blue	24
*Centaura montana alba	White	24
Chrysanthemum nipponicum	White	24
*Chrysanthemum, Shasta Daisy "Alaska"	White	24
Funkia lancelota	Lilac	24
*Gaillardia grandiflora	Crimson and orange	24
Lythrum alatum	Crimson purple	24
*Pentstemon gloxinioides	Various	24
Salvia Greggii	Carmine	24
Salvia Greggii alba	White	24
Valeriana coccinea	Rosy red	24
Valeriana coccinea alba	White	24
Eupatorium Fraseri	White	24
*Anemone Kreimhilde japonica	Rose pink	24 to 30
*Anemone Loreley japonica	Mauve pink	24 to 30
*Anemone rosea superba japonica	Silvery rose	24 to 30
*Clematis Davidiana	Light blue	24 to 30
*Lobelia cardinalis	Red	24 to 30
*Montbretias in variety	Various	24 to 30
*Platycodon grandiflorum	Deep blue	24 to 30
*Platycodon grandiflorum album	White	24 to 30
*Liatris spicata	Lilac	24 to 30
*Anemone japonica alba	White	24 to 36
*Anemone japonica, Alice	Silver rose	24 to 36
*Anemone japonica, Prince Henry	Deep pink	24 to 36
*Anemone japonica, Whirlwind	White	24 to 36
*Caryopteris Mastacanthus	Light blue	24 to 36
*Coreopsis lanceolata grandiflora	Yellow	24 to 36
*Echinops Ritro	Metallic blue	24 to 36
*Gypsophila paniculata and fl. pl.	White	24 to 36
*Lobelia syphilitica	Blue and white	24 to 36
*Dahlias in variety	Various	24 to 84
*Aster Feltham Blue	Blue	30
*Cimicifuga japonica	White	30
Clematis heracleæfolia	Pale blue	30
Eupatorium purpureum maculatum	Reddish purple	30
Iris fœtidissima	Oange red fruit	30
*Rudbeckia subtomentosa	Lemon yellow	30
Polygonum amplexicaule	Pinkish	30 to 36
*Anemone japonica, Queen Charlotte	Soft pink	30 to 36
*Aster novi-belgii, Saphir	Sky blue	30 to 36

SEPTEMBER—*continued*

Name	*Color*	*Height in inches*
*Aster novi-belgii, St. Egwyn	Bright pink	30 to 36
*Aster novi-belgii, Robert Parker	Lavender	30 to 36
*Aster novi-belgii, Snow Queen	White	30 to 36
Cimicifuga simplex	White	30 to 36
Funkia subcordata	White	30 to 36
Solidago rigida	Orange yellow	30 to 42
*Vernonia arkansana	Purple	30 to 42
*Tritoma Pfitzerii	Orange scarlet	30 to 42
*Gladioli in variety	Various	30 to 48
Solidago speciosa	Yellow	30 to 48
*Delphiniums, all vars.	Various blues	30 to 60
*Aconitum napellus bicolor	Blue and white	36
*Anemone japonica, Geante Blanche	White	36
Aster formosissimus	Violet	36
*Aster novi-belgii, Herbstelfe	Lavender blue	36
*Aster novi-belgii, Mrs. Raynor	Purplish crimson	36
*Helenium, Riverton Beauty	Bronzy red	36
*Lilium speciosum and vars.	White to pink	36
Lythrum virgatum	Rosy purple	36
*Phlox, Miss Lingard	White	36
*Rudbeckia Newmannii	Orange yellow	36
Rudbeckia purpurea	Reddish purple	36
*Aster novi-belgii, Mme. Soyneuse	Light blue	36 to 40
*Echinops sphærocephalus	Bluish white	36 to 42
*Eupatorium ageratoides	White	36 to 42
Artemisia vulgaris	White	36 to 48
*Aster lævis	Light blue	36 to 48
*Aconitum Napellus	Dark blue	36 to 48
*Aster Beauty of Colwall	Lavender blue	36 to 48
*Aster Peggy Ballard	Lavender blue	36 to 48
*Lythrum roseum superbum	Rose	36 to 48
*Lythrum roseum, Perry's variety	Cherry red	36 to 48
*Pyrethrum uliginosum stellatum	White	36 to 48
*Salvia azurea	Sky blue	36 to 48
*Salvia Pitcheri	Bright blue	36 to 48
Polygonum cuspidatum	White	36 to 60
Senecio clivorum	Yellow	36 to 60
*Thalictrum dipterocarpum	Mauve	36 to 60
*Tritoma uvaria grandiflora	Reddish salmon	39 to 48
*Physostegia virginica alba	White	40 to 50
Cimicifuga dahurica	Creamy white	42
*Aster turbinellus	Purple blue	42 to 48
Artemisia lactiflora	Creamy white	42 to 54
*Aster novæ-angliæ	Purplish violet	48
*Aster novæ-angliæ, Lillian Fardel	Bright mauve	48
*Aster novæ-angliæ rosea	Purple mauve	48
*Helenium autumnale rubrum	Bronze red	48
*Helenium, Riverton Gem	Golden yellow	48
*Helianthus mollis	Lemon yellow	48
*Aconitum uncinatum	Purple	48 to 54
Lespedeza japonica alba	White	48 to 54
Aster cordifolius	Rosy lilac	48 to 60
Lespedeza Sieboldii	Rosy purple	48 to 60
Achillea eupatorium	Yellow	48 to 60
*Physostegia virginica	Soft pink	48 to 60
Rudbeckia maxima	Bright yellow	48 to 60
Solidago canadensis	Yellow	48 to 60
Stenanthium robustum	White	48 to 60
*Salvia uliginosa	Blue	48 to 70
*Boltonia latisquama	Pink	48 to 72
Hibiscus (Mallows)	White to maroon	48 to 84
Clematis stans	Blue	54 to 60
*Aconitum Wilsonii	Violet blue	54 to 72
*Helenium autumnale superbum	Yellow	60 to 72
Helianthus giganteus	Pale yellow	60 to 72
*Helianthus, Wolley Dod	Deep yellow	60 to 72
*Rudbeckia laciniata fl. pl.	Golden yellow	60 to 72
Rudbeckia nitida	Primrose yellow	60 to 72
Silphium perfoliatum	Yellow	60 to 84
*Boltonia asteroides	Lavender	60 to 84

OCTOBER AND NOVEMBER

Name	*Color*	*Height in inches*
*Silene Schafta	Pink	4 to 6
*Viola cornuta vars	Various	5 to 8
Anemone hupehensis	Mauve rose	10 to 12
Spigelia marilandica	Bright red	12 to 15
Hieracium aurantiacum	Orange	12 to 24
Hieracium aurantiacum rubrum	Orange red	12 to 24
*Anthemis tinctoria	Yellow	15
*Anthemis tinctoria alba	White	15
*Anthemis tinctoria pallida	Pale yellow	15
*Chrysanthemum arcticum	White	15
Sedum maximum atropurpureum	Bronzy rose	15
*Sedum spectabile	Rose	15 to 18
*Sedum spectabile, Brilliant	Amaranth red	15 to 18
*Aconitum Fischeri	Pale blue	18
Gentiana scabra	Blue	18
Geranium sanguineum	Crimson	18
Geranium sanguineum album	White	18
*Matricaria, Little Gem	White	18 to 24
Physalis Franchetii	Orange red fruits	18 to 24
*Aster patens	Bluish purple	18 to 24
*Chrysanthemum, all vars	Various	18 to 30
*Phlox decussata	Various	18 to 42
*Chrysanthemum nipponicum	White	24
*Chrysanthemum Shasta Daisy "Alaska"	White	24
*Gaillardia grandiflora	Orange and crimson	24
Valeriana coccinea	Rosy red	24
Valeriana coccinea alba	White	24
*Anemone japonica varieties	Various	24 to 36
*Aster, same vars. as September	Various	24 to 60
Iris fetidissima	Orange red fruits	30
Rudbeckia subtomentosa	Lemon yellow	30
Polygonum amplexicaule	Pinkish	30 to 36
*Gladioli in variety	Various	30 to 48
*Caryopteris Mastacanthus	Light blue	30 to 36
Cimicifuga simplex	White	30 to 36
*Rudbeckia purpurea	Reddish purple	36
Solidago speciosa	Yellow	36 to 48
*Tritoma uvaria grandiflora	Reddish salmon	36 to 60
*Aster turbinellus	Purple blue	42 to 48
Lespedeza japonica alba	White	48 to 54
*Aster cordifolius	Rosy lilac	48 to 60
*Salvia uliginosa	Blue	48 to 72
Lespedeza Sieboldii	Rosy purple	50 to 60
Clematis stans	Blue	54 to 60
Rudbeckia nitida	Primrose yellow	54 to 72
*Aster tataricus	Bluish violet	60 to 72
Helianthus giganteus	Canary yellow	60 to 72
Helianthus Maximilianus	Golden yellow	60 to 84
*Boltonia asteroides	Lavender	60 to 84
*Dahlias in variety	Various	24 to 84

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(Figures in *italics* refer to illustrations.)