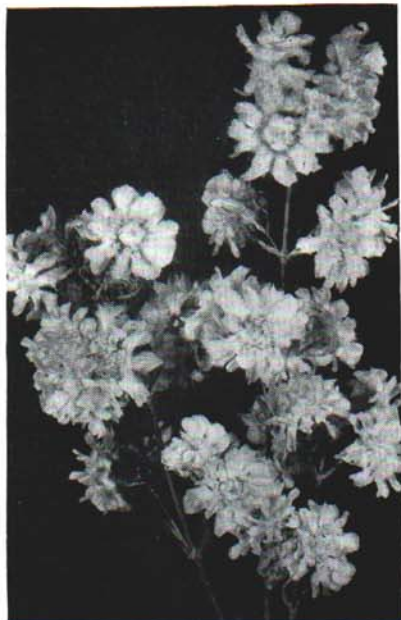


HARDY
PERENNIALS
or
LANDSCAPE PLANTING
IN MICHIGAN



THE SEASON'S GREETINGS

Since time immemorial, man has welcomed the spring flowers. Each succeeding year, they are greeted even more joyously than before, like old friends returned. The approach of the growing season thus becomes closely associated with the anticipation in the enjoyment of these hardy flowers that annually reappear and fittingly symbolize the spirit of spring.

They come with a budding, growing, unfolding nature, attuned to the cry of an awakening warmth and bearing the message that life is immortal and that true beauty can never die. Earth holds nothing comparable to the sheer and exquisite loveliness of the tulips and daffodils, of the iris and the peonies, of the larkspurs, lilies, and other floral treasures that flourish upon her fertile bosom. No wonder man welcomes these messengers that renew his hopes, reinvigorate his spirits and make his heart glad.

Then, what would the summer hold forth without its floral tributes rioting in such an extravagance of colors, the primary ones of the rainbow supplemented with an array of such delicate shades, nuances, and tones of color that no artists can even approximate. And the flowers of Autumn have their charm,—brilliant yellows, rich crimsons, stimulating reds, royal purples, and virginal whites that lend their warmth to the drab and colorless surroundings like that of an open fireside upon a cold and boisterous night. The flowers of the autumn are thus also entitled to man's praise and gratitude for the display of all this beauty in a world growing torpid and languid in preparation for winter's chilling blasts. Are not these autumn flowers like unto rare friends that visit us in a season of the year when we need them most? They remain to cheer and comfort us long after their more fragile predecessors have departed, until finally they too are withered by the north wind's breath.

Thus "Nature gives to every time and season some beauties of its own; and from morning to night, as from cradle to grave, is but a succession of changes so gentle and easy that we can scarcely mark their progress".*

*Charles Dickens.

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HARDY PERENNIALS

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LANDSCAPE PLANTING
IN MICHIGAN

C. P. HALLIGAN

Flowering plants that perpetuate their growth from year to year commend themselves as the basis of a good home garden. They have been considered of such inestimable value that explorers have for centuries searched the most distant and little known lands for them. Plantsmen have labored persistently to increase and improve the variety and quality of the many kinds available. The product of these centuries of labor is contained in the great wealth of the floral kingdom that is now available for our enjoyment.

Though the desirability and enjoyableness of hardy perennials about the home is in part measured by their intrinsic beauty, they are treasured more in a landscape way for the beauty they develop in the scenes of which they form a part. A beautiful landscape effect developed by hardy perennials is not a happy accidental coincidence but rather the result of a well conceived selection and arrangement of them. In selecting plants for pleasing garden effects, the aesthetic qualities of the plants and the appropriateness of these qualities for developing the general type of beauty to prevail in the garden effect should be considered. Most garden plants commonly listed by nurserymen are inherently beautiful. Garden effects produced by them are often made less effective because the most suitable kinds have not been selected or the arrangement and disposition of them has not been the most tasteful and expressive.

PLANT CHARACTERISTICS

The characteristics of plants and flowers which are most fundamental in developing pleasing expressions are their form, color, and texture. Garden composition is largely a matter of the harmonious combination of these plant characteristics and of their relative arrangement in developing the larger forms, colors, and effects of texture in the scene as a whole.

Form—The beauty of a garden or of any landscape scene is partly determined by the character of the forms of the several plants that compose it as well as by the resulting forms that are developed as these plants are assembled into groups and masses. This means that in developing pleasing garden effects one should not have a heterogeneous collection of plant forms but rather a repetition of form character with contrasting forms sparsely introduced to lend variety and interest to the scene.

Hardy perennials may be considered in form composition as being vertical or horizontal line plants; that is, they are conducive to the

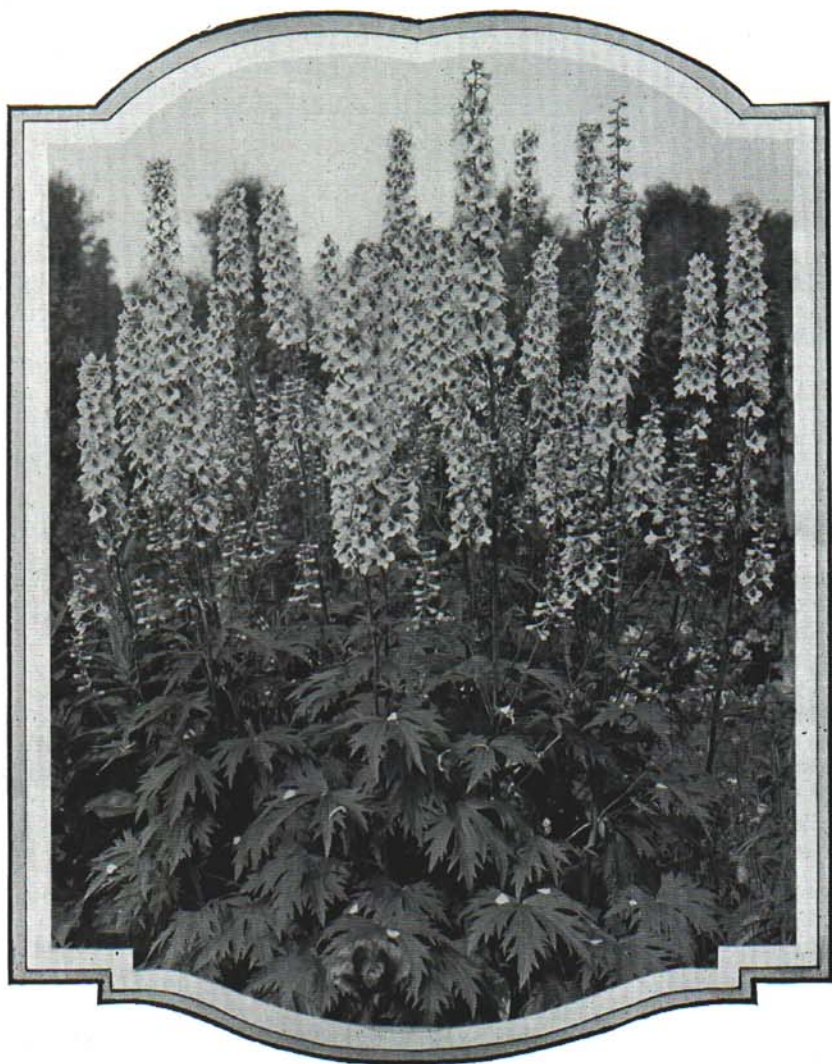


Fig. 1. The vertical spikes of the larkspurs develop a picturesque effect in garden scenes.

development of vertical or horizontal line effects as arranged in the garden. Foxglove, larkspur, hollyhock and monkshood are typical vertical line plants. Sweet-william, peony, iris, Shasta daisy, and other upright, spreading plants with flowers assuming about the same height of growth produce horizontal line effects when densely grouped or massed. Some plants, as the babysbreath and sea-lavender, tend to produce billowy, ethereal effects by the light, airy indefinite forms of their flower masses. Other spreading, low growing forms may be considered as ground covers.

Vertical-lined forms, when used sparingly, tend to develop spirited effects in garden scenes. They are usually most appropriate when planted in groups rather than masses and when generally located near the back of the plantings with some of the groups extending at intervals towards the front.

Horizontal-lined forms which are not sharply defined tend to produce quiet, restful effects. They should generally be used in masses rather than in groups or as single specimens, the masses being much longer in width than depth. When thus arranged, the plants should be planted so close that the foliage and flowers of neighboring plants merge and fill all intervening spaces. Generally, the greater portion of perennial plantings should be composed of horizontal line plants, sufficiently broken with vertical line plants to lend a touch of variety and interest to the scene. Unity with variety is, therefore, one of the important requirements in developing pleasing form compositions with hardy perennials.

Color—Hardy perennials as a class are grown particularly for their flower colors. Garden composition with them, therefore, is largely a matter of color composition; that is, the gardener selects and arranges the flowers to obtain colors which give pleasing and harmonious effects.

Colors vary greatly in the emotional effects that they produce. Orange and scarlet are stimulating colors that readily attract attention while greens are quiet, restful colors. Yellows are warm, reflecting the sunlight of the garden and, therefore, are especially acceptable in the chill of the spring and fall seasons. Blues are the cool colors of the garden that make their greatest appeal during the warm midsummer months.

It is well to remember that in all color composition the richer and more intense the color the more sparingly it should be used while the lighter and more dilute the color, the larger the amount of it that may be used and the more these masses of colors may be repeated. Therefore, light flower colors should constitute the predominating effect of the garden.

Light colors are likely to prove more pleasing together than the deeper colors because light colors are the deeper colors diluted with white, which is harmonious with any color. Unfortunately, there is no concise rule or formula for arranging colors harmoniously. It may be said, however, that white, although a cold color when used alone, is the peace-maker of the garden. Interposed between dissimilar colors, it tends to make them more harmonious. All yellows are pleasing in one another's company although few reds or purples will exist in peace together. Some pinks, however, of the same color value may prove satisfactory as neighbors. Yellow and white together unfailingly give

pleasure. There is a fresh simplicity in their association that refreshes and invigorates the mind.

Light blues seem most pleasing in association with yellows and with white. Thus, the light blue spike speedwell makes a pleasing harmony with the yellow daisy-like flowers of the Kelway camomile and with the white of the Shasta daisy. The light blue larkspurs are pretty with Madonna lilies while some of the lemon lilies arranged in front of spring flowering shrubs are pleasing when mixed with a few clumps of blue perennial bellflowers.

It is interesting to note that yellow, orange, and scarlet are the colors for the full sunlit areas while blue, violet, and lavender are the colors for the shadows and the shady places. Magenta is the most combative



Fig. 2. Early spring garden scene with rockcress, snow-in-summer, and goldentuft predominating.

color of the garden. Strong yellow, orange, scarlet, cherry, and salmon pink are especially inharmonious with it. It is not, however, a displeasing color when associated with deeper and paler blue tones of itself, such as the dim blue of the monkshood, the light blue of the spike speedwell or the sky blue of the *Salvia azurea*.

In planning the garden for harmonious color effects, it is well to have flowers of not more than two or three colors predominating in the scene at the same time. These should be not only of harmonious colors but of suitable heights, forms and textures. They should be arranged in separate color groups and masses that are repeated to such an extent that their flower colors may light up and characterize the entire garden scene. Other harmonious combinations may also be planted for other specific seasonal effects. This plan of selecting and

arranging garden plants for specific seasonal effects will result in more effective displays than selecting them primarily with the thought of a continuous garden effect.

Texture—One of the conditions that tends to make a garden effect pleasing is that of harmony in texture as determined by the size and arrangement of the leaves, branches, and flowers of adjacent kinds of plants. Large leaved, coarse branched plants should not be thoughtlessly mixed with small leaved, fine twigged plants. Harmony of texture tends to produce unity of effect. Fine textured plants are particularly suitable for the development of nearby effects while coarse textured plants are desirable for distant effects and for planting areas that should be accentuated by their bold contrast of texture.

One should not become discouraged if the most satisfactory arrangement of the garden is not attained the first season. One of the many pleasures in flower gardening is that of rearranging the plants from time to time to attain greater harmony of color, form, and texture and better seasonal effects. Fortunately, most perennials are improved by thus shifting and dividing them every few years.

CULTURE

Hardy perennials as a class require but a moderate amount of care to thrive satisfactorily. Some of them, however, fail to grow where certain cultural conditions are not provided.

Soils—There is a wide diversity in the adaptability of perennials to soil conditions. From the sterile, infertile sand of the dunes to the deepest and richest tillable lands, perennials may be found that are naturally adapted to this great range of conditions. Some plants require an acid soil while others prefer a sweet or alkaline soil. Many are favored by a cool, swampy soil, while more thrive where it is both warm and well drained. A few grow in dense shade, but most perennials thrive best in full sunlight and upon a deep loamy well pulverized soil.

Drainage—Poor soil drainage is one of the most common sources of failure with hardy perennials. Winter killing is often largely due to insufficient soil drainage. Though many perennials naturally thrive in moist situations, those most commonly grown in the garden are upland plants that require a well drained soil. Good surface drainage is also a very important factor in the successful wintering of perennials.

Fertilizers—Most soils do not liberate enough nutrients for the best development of the commonly grown flowering perennials. Therefore, in preparing soils for planting and in maintaining them thereafter, the application of fertilizers is necessary.

Garden soils commonly should be modified in texture before planting is undertaken. Stiff clay soils may be improved by the application of stable manures, peat, or leaf mold. If sand can also be mixed with them, these materials should make such soils more mellow, more pervious to water, and otherwise better for root growth. Sandy soils likewise are improved by heavy applications of organic fertilizers or of peat, as well as by the addition of clay.

Fertilizers are helpful in promoting plant growth by supplying the chemical elements that happen to be deficient in the soil. Most upland soils are improved by the use of fertilizers containing nitrogen in a quickly available form. Some soils are apparently deficient in phosphorous while muck soils and the lighter more infertile types of soils often produce better growth when potash also is applied in the fertilizer. A general purpose commercial fertilizer for the perennial garden should contain a relatively high percentage of nitrogen in a quickly available

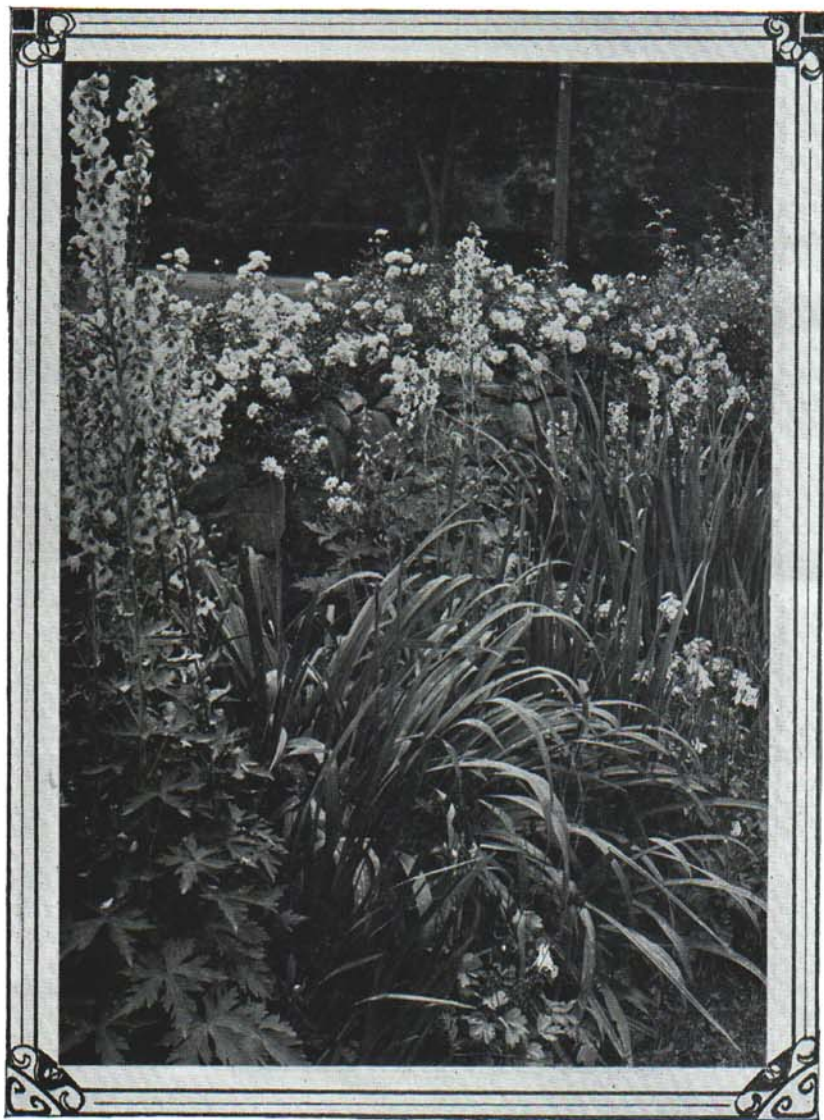


Fig. 3. Hardy perennials planted at the base of the garden wall.

form, a moderate percentage of phosphorous and a low percentage of potash.

After perennials are established, the practice of applying fertilizer each spring as growth begins and sometimes of subsequent applications during the growing season is helpful in promoting and maintaining a healthy and vigorous growth of the plants.

When well decomposed stable manure is used as a fertilizer, it should be evenly spread between the plants and worked into the soil. Care should be taken not to cut or disturb the roots of the perennials in this work. When a commercial fertilizer is used, it should be spread as uniformly as possible between the plants without coming into direct contact with the foliage. Since this is often impractical when the plants are closely established and there is, therefore, danger of burning the foliage with the fertilizer, the plants should be sprinkled directly after the application with a fine mist-like spray to remove any of the fertilizer that may have adhered to the leaves.

An application of about 25 pounds of a complete fertilizer to 1,000 square feet of garden area would constitute a reasonable amount for an annual spring application but, if nitrate of soda, sulphate of ammonia, or some other quickly available form of nitrogen is used alone, about five pounds to 1,000 square feet of garden area is sufficient for a single application. It is especially important to sprinkle the foliage after using these forms, to prevent burning.

Since many garden soils contain sufficient potash and phosphorus for plant growth but are deficient in nitrogen, the application of a complete fertilizer every third or fourth year, supplemented by nitrogenous fertilizers in the intervening years would seem a desirable program in maintaining the fertility of the garden with commercial fertilizers.

Transplanting—Early spring is doubtless the best time to transplant many of the perennials. The aim should be to transplant them before growth has started and as early as possible in the season, so they may become reestablished before the heat and drought of summer overtakes them.

Some perennials, however, actually start development in the fall, producing a certain amount of growth before freezing weather. Such plants resume development the following spring as soon as weather and soil conditions become favorable, making a most rapid growth in early spring. The latter part of summer or very early fall is the best time to transplant such perennials as iris, peonies, lilies and many of the evergreen, early spring flowering perennials. Late fall planting is not desirable, since the plants do not become reestablished before freezing weather and hence are killed during the winter.

Transplanting is a critical operation in the life of a plant. Many of the roots are sacrificed in digging and the remainder are exposed for various periods to unfavorable conditions of moisture and temperature. Before they are replanted, they are already weakened by these conditions. Furthermore, some time elapses after transplanting before the plants are sufficiently reestablished to draw upon the soil for their sustenance. Any practice that will minimize these injurious conditions tends to insure greater success in transplanting. Careful digging to retain as many roots as possible, keeping the roots moderately cool

and moist, and shading and protecting the plants from sun and wind are all desirable practices.

Usually, plants producing many fine fibrous roots transplant more successfully than those that form but few large brittle roots. Plants which transplant with difficulty should be dug in a manner which retains a ball of soil to the depth and width of the growth of the main roots of each plant. This actually means that most of the roots are retained undisturbed and are transferred to a new location.

Plants should be set firmly in the soil, with the roots well spread, to a depth slightly greater than that at which they previously grew. There is little danger of packing the soil too firmly about the roots if it is not too wet. Watering at the time of transplanting is helpful in firming the soil and in preventing wilting. Where the soil is moderately moist and the plants firmly set, watering is not essential but, when transplanting is done during hot dry weather and particularly when there is some breeze, newly planted perennials should be both watered and shaded.

Cultivation—Many perennials are excellent for naturalizing; that is, they may be planted under suitable conditions where without cultivation or other timely attention they thrive satisfactorily. Many rock garden plants adjust themselves well to their environment and are best when left undisturbed, but most of the garden perennials require more or less timely care for their best development.

Cultivation is commonly important as a means of conserving soil moisture, of controlling weeds, and of maintaining a more uniform soil temperature. Indirectly, cultivation tends to induce deeper rooting, which insures a more uniform supply of moisture for the plants, making them less subject to drought. Perennials should be cultivated as frequently as is necessary to control weeds and to prevent the surface of the soil from packing. Frequent but shallow cultivation is better than an occasional deep cultivation.

The flowering period of many perennials is prolonged by removing the old flower heads directly after blooming. Thus larkspur, pyrethrum and some other early flowering kinds may often produce a second crop of flowers if the tops are thus cut back after blooming, the soil recultivated about them, and the plants otherwise reinvigorated by watering, fertilizing, or other helpful treatment. It is particularly important with garden phlox to remove the old flower heads before the seed is formed. Otherwise this seed matures and falls to the ground where it germinates and the seedlings later crowd out the mother plant. Such seedlings are commonly of very inferior flowering qualities. In addition to this, the practice of removing old flower heads tends to maintain a tidier effect in the garden.

Mulching—Most of the hardy flowering perennials are benefited by a winter mulch of strawy manure, straw, or coarse litter. The aim is to prevent alternate freezing and thawing of the plants, particularly in late winter and early spring, rather than to prevent freezing. The mulch should be applied preferably after freezing weather has set in and should be removed from above the plants after the soil has thawed out in early spring and before growth has begun. If strawy manure

has been used for a mulch it is generally desirable to spade or mix it into the soil between the plants in the spring.

Lilies, anemonies, and other perennials that delight in a cool moist soil may be benefited by a summer mulch of peat moss, straw, or other material. A mulch of this sort also tends to limit the germination of weeds. Where watering facilities are not available, summer mulching, which helps to retain soil moisture, is especially beneficial.

Watering—Where watering facilities are available, a more uniform growth of most of the garden perennials may be maintained during the summer months. It is considered that an inch of water per week is sufficient during the growing period for maintaining growth under average conditions. Automatic lawn sprinklers usually apply this amount in from three to eight hours. This should moisten the soil to a depth of eight to ten inches and prove sufficient for a period of about a week except when weather conditions are unusually hot and dry. Heavy daily watering tends to maintain a soggy condition of the soil which is not favorable for root growth while light daily sprinklings encourage a shallow root development, making the plants more susceptible to drought.

Water should be applied as a heavy mist and only as fast as the soil can absorb it. Heavy sprinkling, that is, in the form of heavy drops packs the soil and often applies the water faster than it can be absorbed.

It is a general practice to sprinkle the home garden during the afternoon or evening. This is doubtless the most convenient time and has some advantage in permitting the moisture to be largely absorbed by the soil before the sun begins its work of evaporation. However, where fungous diseases are likely to be troublesome, as with garden phlox, hollyhocks, lilies and peonies, keeping the foliage wet over night promotes the development of these fungous troubles. Under such conditions, watering should be accomplished sufficiently early in the day to permit the foliage to become dry before sundown.



WORTHY KINDS OF HARDY PERENNIALS

The most worthy kinds of perennials and the most generally satisfactory species and varieties for home planting in Michigan are presented in the following pages.

*Achillea millefolium**

RED YARROW

Yarrow is a common weed in pastures, readily recognized by its pungent, dark green, finely cut foliage and by the broad, flat heads of small, white, rayed flowers that terminate its erect leafy stems. Like many other wild flowers, it is pleasing and distinctive in its natural



Fig. 4. Red yarrow with its finely cut foliage and rosy-red flowers.

setting but does not invite cultivation. When these flower heads, however, instead of pearly-white, are delicate pink or rosy red, they attract the admiration of the beholder; and, when numerous masses of such erect daintily colored flowerheads grace the herbaceous border or paint the foreground of shrubbery plantings, one can hardly realize that such admirable flowers are cultivated selections of the common wild yarrow.

Flowering from late June to late September, this dainty flower is a perfectly hardy perennial of easiest culture, withstanding both infertility and drought. It is, therefore, a most accommodating perennial for summer flowering where the soil is too infertile for the cultivation of many other perennials. In Michigan, it is particularly worthy of consideration for planting in sandy soils, especially where watering facilities are not available. Planted about summer cottages, it will withstand the general neglect and un-

favorable conditions commonly prevalent there and will flower during the vacation period.

Its long blooming season, attractive, fine, feathery foliage, and its dainty flowers make it very suitable for nearby effects. If given a little support, it remains a tidy grower; otherwise, heavy rains or strong winds are likely to disarrange it. The plant is readily propagated by division.

*The nomenclature of this bulletin is in accordance with "Standardized plant names," 1924, proposed by the American Joint Committee on Horticultural Nomenclature.

Achillea ptarmica

SNEEZEWORT, VAR. PEARL

When Achilles discovered the curative powers of this genus in treating Telephus, he doubtless little realized that it would perpetuate his name for centuries to come. Coincidentally, this *Achillea* has the strength and vigor of growth to reflect worthily these attributes of its namesake. It is treasured primarily, however, for the grace and beauty of the pearly-white corymbs of small double flowers that terminate each upward-growing leafy stem, forming masses of pearl-white bloom appearing from late June to the middle of August. The root-stocks of this free flowering sneezewort spread rampantly, usurp all neighboring spaces, and conquer all competing growth, since its upright, slender-leaved shoots are so densely produced.



Fig. 5. Sneezewort, variety Boule de Neige.

The plant attains a height of from 16 to 24 inches, making it most suitable for intermediate plantings in the perennial border. It is so readily grown on soils of even moderate fertility and moisture and develops such masses of whiteness in the garden scene that it proves very desirable for summer effects.

Though the sneezewort may be used harmoniously with any other colored flower, it is particularly refreshing when arranged in the perennial garden with such pleasing neighbors as *Coreopsis lanceolata*, *Anthemis tinctoria*, and *Veronica spicata*. As a cut flower, it is almost indispensable in the home garden, especially to those who enjoy the daily luxury of picking and arranging artistic, graceful bouquets for the house. The small double button-like flower heads are very effective in bouquets, when combined with other flowers, in lending a graceful ethereal effect and in harmonizing less harmonious colors.

After the flowers have passed their period of display, the old flower heads should be removed, as they turn brown after maturing and present an untidy effect. The spreading habit of the plant makes it very readily adaptable for propagation by division.

Var. Boule de Neige—A whiter flowering variety more erect in habit of growth and less spreading.

Var. Perry's White—The finest, largest, and most showy flowering form.

Aconitum

MONKSHOOD

The monkshood gains its quaint name from the odd hood-like form of its stately flowers. They are usually blue but vary in varieties to white and are borne in upright spikes that in some species are dense and compact but in others more open and loose paniced. Though some species bloom in July and others in August, the admirable flowers seem particularly welcome later in the season after most of the other flowers have faded.

It is of interest to know that from the roots of *Aconitum napellus* the poisonous medicinal alkaloid known as aconitine is obtained. The leaves of this and other species also are used for medicinal purposes.

The roots of the monkshood are generally tuberous and turnip-shaped or thick and fibrous. The leaves are usually dark green, shining, palmately divided and deeply cut. The flowers are borne on erect stems varying from two to six feet in height.

The summer flowering species are especially effective in the herbaceous border with the Madonna and royal lilies, the Shasta daisies and white flowering varieties of phlox, while those flowering in the autumn present a pleasing contrast to the yellow *helianthus* and *rudbeckias* as well as to the Japanese anemones. They do best in a very rich soil, either in full sunlight or partial shade. When once established they should not be disturbed, but are much benefited by a leaf-covering over winter.

Aconitum napellus is a popular garden species that blooms early, has large bright blue flowers, and attains three to four feet in height. It has varieties in other colors, ranging to white.

Aconitum fischeri is a dwarf form, attaining but two to three feet in height. The pale blue flowers appear in September and October. This late blooming species is one of the hardiest and best of the monkshoods. The variety of this species known as *Aconitum fischeri wilsoni* is a higher growing, deeper colored strain flowering at the same season, that is also very desirable.

Althaea rosea

HOLLYHOCK

The hollyhock, although native to China, has been a characteristic habitant of American gardens since the early Pilgrim days when this stately plant customarily occupied the border of their simple front-door-yard or some distant corner of their herb and vegetable garden and sometimes lent the one touch of floral beauty to their meagre effect. Through succeeding decades it has graced many otherwise depressing home scenes and has sent with its gayety of bloom its message of cheer to many down-cast spirits. The ease of its propagation and cultivation, the aspiring, stately habit of its growth and the attractiveness of the numerous large, gayly colored flowers that are produced successively over an extended period, make this old time favorite one of the most generally known and grown of all perennial plants.

The hollyhock may be propagated readily from seed sown in August, or in early spring and the plants thrive in any soil of moderate fertility. Even on stiff clay soils, its stout deeply penetrating roots enable it to flourish well. Established plants seem to resent being disturbed but there is no particular difficulty in transplanting young seed-



Fig. 6. Hollyhocks gracing a distant corner of the garden.

lings in early spring. The foliage of this pioneer plant is large and coarse, but the wide flaring flowers are available in varieties of single or double forms and in colors varying from white to pink and to the deepest and richest crimsons, as well as from white to light yellow. They appear most appropriate against a background of higher growing shrubs or in front of a wall, fence, or building but are not as satisfactory in a more open area.

The size and coarseness of the foliage make it most suitable for distant effects, while its aspiring habit and bright flowers lend a cheerful picturesqueness to garden scenes. Usually the light pinks mixed sparingly with light yellow and white are the best colors for garden effects. Rust, a fungus disease, often defoliates the plant in early summer, resulting in an untidy effect. Though this disease may be controlled by spraying with Bordeaux mixture or by dusting with sulphur in early season, it is usually better to plant lower growing perennials in front of the hollyhocks to cover the bareness of effect that may be developed by this trouble.

Alyssum saxatile

GOLDENTUFT

The goldentuft has such plain, ordinary leaves that one is rather surprised to find it quite so attractive in its floral display. Attaining about a foot in height, the plant is a sprawling woody-stemmed perennial with slender, plain, velvety-grey leaves. Retaining these leaves over winter, it starts rapidly into growth in early spring. Upon these new shoots are borne the numerous compact clusters of small yellow flowers, so attractive in their effect that masses of them appear as sheets of gold in the early May garden.

The goldentuft has proved so dependable and prolific that it has become the most popular and generally used plant for producing this sunshine color in the garden in early spring.

Though the plant is perfectly hardy and is not in the least particular about the fertility of the soil and though it withstands very dry soil conditions, it has a decided preference for full sunshine and for soils well drained in winter. Upon poorly drained soils, the roots are heaved out of the ground in the alternate freezing and thawing of late winter. Since the plant develops but few, deep, fleshy roots it is not easily transplanted. One may, however, seed it in place or transplant while the seedlings are still young and but partially developed.

Although most commonly used in the rock garden, the goldentuft is desirable in the perennial border for its early spring effect. It combines harmoniously with the white rockcress, the moss pink, or the purple aubretia and adds the desired airy and graceful touch to the garden when combined with the tulips and other bulbous spring flowers.

Var. *compacta*, the dwarf goldentuft, is a tidier growing form and considered better than the other type, especially for the rock garden.

Anemone japonica

JAPANESE ANEMONE

This oriental floral treasure spreads its cheerful greetings with the departing beauty of the garden in early fall. From then until freezing weather, its graceful admirable flowers in rose, pink, and white are so lavishly borne upon its high branching stems as to compose, with the hardy chrysanthemums, the leading feature of the late fall garden. Through sunshine and rain, through cold winds and early frosts, its gayety of bloom continues steadfastly on until its persistent flowering is checked by the arrival of freezing weather. It is then one feels that had this treasured gem started somewhat earlier to flower it might have completed its attractive bloom before being overtaken by the approach of winter. For this reason, the plants are often grown in partly shaded cold frames where they may be further protected in late fall and thus permit the completion of their bloom after all other outdoor flowers have departed.

Unfortunately, however, it is the most exacting of out-door perennials and though planted in many gardens it frequently fails to flourish satisfactorily. To be successful this plant requires a wind protected spot where the soil is deep, rich, and moist but well drained in winter. Though this flower of the Orient does well in a sunlit situation, it flourishes better where partly shaded from the mid-day sun. There is advantage in shading the roots by the foliage of other earlier flowering interplanted perennials or otherwise by mulching with peat or leaf mold, maintaining a cooler and more uniformly moist condition of the soil.

The flowers are single or semi-double, two to three inches in diameter and usually pale rose or white with yellow centers. They are borne terminally on slender branching stems well above the foliage, some two to three feet high. The leaves are much lobed and attractive, being formed largely in clumps at the base of the plant.

This fall windflower makes a very attractive effect when flowering in groups or masses about the herbaceous border, under high branching trees or among low growing shrubs. When thus satisfactorily situated, it should not be disturbed.

In addition to being attractive as a fall flowering garden plant, it makes an admirable cut flower. The plant is propagated by seed or by division and should be well protected over winter by mulching with



Fig. 7. Japanese anemones are beautiful fall garden flowers.

leaves, straw, or strawy manure. Otherwise it is rather likely to winter kill. Transplanting should be accomplished in early spring, and the soil should be well manured and deeply prepared.

There are many desirable varieties of this anemone, among which are selected the following:

Queen Charlotte: semi-double; pale pink.

Whirlwind: semi-double; white.

Kriemhilde: semi-double; rich pink.

Anemone hupehensis

EARLY ANEMONE

The early anemone is a more recently introduced species from central China that is hardier and earlier flowering, blooming from early September to the middle of October. It resembles a miniature Japanese anemone and though the flowers are not quite as large or as perfect as its prototype, they are produced in greater numbers. Doubtless, this species will prove more adaptable to general planting in Michigan, and may well be tried by any who have failed to succeed with the Japanese anemone.

The rose colored flowers of this species are about one and one-half inches in diameter and the plant grows from 12 to 14 inches high.

Anthemis tinctoria

CAMOMILE (GOLDEN-MARGUERITE)

The camomile, or golden-marguerite, is of an old world temperate region genus, much known and grown there in the past as a medicinal plant. This particular species presents so many attractive qualities that it was fortunately introduced to the garden as a flowering perennial.

From early summer, when its bright daisy-like flowers first surmount its finely cut, heavily scented foliage, until late summer, when its floriferous season is completed, it blooms so continuously and profusely as to appear like sheets of lemon yellow, especially if arranged in repeated groups or masses about the garden. There is no perennial more cosmopolitan of soil conditions than this bright, yellow-centered and yellow-petaled daisy which thrives equally well on the less fertile and dryer soils as on the richer and deeper ones. Though it flourishes in full sunlit areas, in late afternoons on bright days, the petals of its sun-staring flowers are often found drooping listlessly in a most wilted, dejected, and fatigued manner. How surprised is one, then, unacquainted with this habit, to be greeted the next morning by the same sun-lit flowers entirely refreshed and resplendent after their evening slumber. After many



Fig. 8. Camomile or golden-marguerite.

days in the sunshine, its bright rays droop again, never to re-awaken but to clasp tightly against the back of its golden central disc leaving it apparently denuded of its petalous tresses.

This deceptive flower may also mislead one by its habit of producing flowers varying from white to lemon-yellow in the first season from seed. Although some of these seedlings will persistently produce white flowers, selection for the deeper colors should be deferred until after the first year, when it will be found that many of them produce lemon-yellow flowers.

The habit of the plant is rather bushy, to a height of one and one-half feet to two feet. Though no yellow daisy-like flower is produced in greater profusion over a longer period for summer garden effects, the flower is not as large, as deep golden in color, or as desirable for cut flowers as the *Coreopsis lanceolata* which blooms about the same time. However, it makes as admirable color harmony in the garden when arranged with the spike speedwell and the Shasta daisy, both of which bloom at the same period and are of about the same height and size. It may also be attractively grouped with Madonna lilies and light blue larkspurs. The plant may be propagated readily from seed and unless the old flower heads are removed after maturing new seedlings readily start about the mother plant.

Variety Kelway—This variety having more finely cut foliage and deeper yellow flowers, is the form that is most desirable and most commonly grown.



Aquilegia

COLUMBINES

The dainty columbines make their gentle appeal by their attractively lobed and clustered foliage through which are thrust their artistically nodding flowers so openly exposed upon their airy stems. In late May and June, of all the garden flowers which present themselves for our edification, these distinctively graceful creations seem most appropriate to portray the joyfulness of this most floriferous season.

A host of widely distributed species of columbine are so generally scattered over the northern hemisphere that this is doubtless one of the most widely known of the flowering plants north of the equator.

In the past the European columbine has been the most common species to grace our gardens, but within recent years the popularity of the whole genus has been greatly stimulated by the introduction of more pretentious hybrids producing much larger and brighter colored flowers with much elongated, graceful spurs. While the flowers of the old-world garden species were commonly blue and white with typically short, hooked spurs, the modern hybrids are in bright pink, scarlet, light blues, yellows, and other gay colors. The plants also are larger and more open in branching but unfortunately are not as long lived as the old fashioned columbine of our forefathers.



Fig. 9. The airy columbines.

As a garden flower, it is not most suitable for producing fundamental masses of color nor is it desirable for distant effects. It is rather one of those treasured flowers whose delicacy of form and color may be best observed by close association. It is the presence of such flowers that makes a walk through the garden a most fascinating and interesting journey.

The plant is easily grown and prefers a moist sandy loam soil with a sunny exposure. It may be propagated readily from seed but, since it hybridizes readily, the seedlings are likely to show considerable variation, especially when the plants are grown in a garden near other species or varieties. The long spurred or hybrid varieties, being shorter lived, should be handled more as biennials, starting new seedlings each year to replace the older plants.

Some of the choice strains of these hybrids are the Mrs. Scott Elliot strain, Farquhar's pink, and the Rainbow Blend.

Arabis

ROCKCRESS

*Ere man is aware
That spring is here
The flowers have found it out.**

In very early spring, shortly after the precocious crocus has flared forth, the audacious rockcress presents its spring greeting. Like sheets of snow that are not melted in the sunshine its masses of small white flowers fairly cover its grayish ground-clinging foliage. From then until the middle of May it showers its dainty whiteness with such lavishness as to compose most striking spring garden effects, especially when combined with such seasonable associates as the golden alyssum, the purple aubrietia and the moss pink.

When favorably situated in a rock garden, where the soil is both well drained and sun exposed, it thrives luxuriantly and extends its wayward rosette-leaved shoots to drape gracefully over neighboring unclothed rocks.

In a well kept garden, the withered flower stalks should be cut away and after flowering the plant may also be cut back. During the heat and drought of summer, although the foliage still remains attractive, the plant takes a summer nap to reawaken in early fall and renew its growth in preparation for the following spring display. The rockcress requires neither fertility of soil nor winter protection but, if fall planted, it should be set comparatively early to enable it to become reestablished before freezing weather. Spring transplanting also should be done early, since the plant renews its growth almost as soon as the soil thaws out. It is commonly propagated from seed but the double forms are also multiplied by division, cuttings, or by layering the trailing shoots.



Fig. 10. The flowers of the rockcress appear very early in spring.

The rockcress is of special value as a rock plant for early spring display where it may be used in masses or tucked in corners of walks, steps, rock crevices, and other spots. It is also admirable as a border plant in the perennial garden.

Arabis alpina is the form most generally handled by nurseries and probably most hardy and thrifty.

Arabis alpina flore pleno is the same as the preceding type except that it has double white flowers that are even more attractive than the single form. The flowers appear slightly later in the spring but bloom over a longer period.

*Ancient Chinese proverb,

*Arabis albid*a has larger, fragrant flowers and is a better and more attractive blossomer than *A. alpina*.

*Arabis albid*a *florepleno*—This double flowering form of *A. albid*a, excels the single form.

Aster

NATIVE ASTERS

There is a lingering charm about the garden in early fall. It is at this season that one senses an impression of departing beauty and hurries to enjoy what color and fragrance the fleeting summer has left. Best of all her legacies for the home grounds are the glowing native asters, recently adopted from the wild where, with the warm sunlit goldenrod, in roadside and meadow they form the chief landscape motif in the color scheme of our glorious American autumn.

Transferred to the garden, they are appreciated more keenly when, after most of the other perennials have faded away, these glowing



Fig. 11. The glowing native asters produce beautiful flower effects in late summer and early fall.

daisy-like flowers appear to play the leading role in the grand finale of our flowering season. Such noteworthy improvements and such desirable selections have been made in the size and color of these native flowers, that now one finds them gaily comparisined in colors ranging from white to light pinks and to the deepest rosy crimsons, as well as from white to the lavenders and light blues and to the deeper, richer blues. In spite of all this advancement, some may still find them rather weedy, untidy plants. They lose their elegance and quality unless they receive good care. They are gross feeders and require the appeasement of this appetite for their best development. Besides heavy feeding and supplying an abundance of moisture, one should ruthlessly remove at least two-thirds of their new growth in early spring, thus directing their energy into the development of but a limited number of new shoots. One also

finds most of the hardy asters a disappointment as cut flowers, since, with such few exceptions, as with varieties Climax and Sam Benham, they fail to remain open under artificial light. In the herbaceous border, however, such notable selections as Blue Gem, St. Egwyn, Glory of Colwell, Feltham Blue, Novae Angliae var. roseus and Mauve Cushion, when harmoniously grouped in reference to colors and heights, form most striking fall effects. Though there is some variation in the soil and exposure requirements of the various species, most of the garden selections flourish in a deep fertile, moderately moist soil and do not endure shade. They are commonly multiplied by division, although many species such as Novae Angliae var. roseus come practically true from fall sown seed. About every fourth or fifth year it is desirable

to redivide the old clumps, selecting the younger portions of the root-stocks for replanting.

Aster alpinus is a dwarf, early flowering species that is prized particularly for its multitudinous lavender, daisy-like flowers borne upon upright stems from eight to ten inches high in June. It is particularly fitting for the rock garden and makes an excellent cut flower.

Aster subcaeruleus is similar to *Aster alpinus* but the flowers are slightly larger and longer stemmed with a striking orange disc, making a showier flower. It is considered less hardy than the former species but has wintered well with slight mulching at East Lansing.

Aubrietia deltoidea

COMMON AUBRIETIA

Of all the dwarf, creeping, diminutive plants for the rock garden, the aubrietia is one of the daintiest and most beautiful. When the dense, somewhat silvery foliage of this mat-forming plant is covered with sheets of richly colored lavender, purple, crimson, or rosy flowers, the effect plainly demonstrates that, "There is no spot so small that it cannot bring forth a few flowers; no rock so barren that it cannot be made to bloom."

The aubrietias are particular favorites of those delighting in early spring effects, for it is with such sprightly associates as the white-flowering arabis, and the golden alyssum that its cheerful flowers unite to form such charming spring effects. Its characters of foliage and



Fig. 12. Common aubrietia is a dainty spring flower in the rock garden.

flowers are so delicate that it deserves a position near walks, seats, or other sojourning spots where these dainty qualities may be readily seen. It is also a choice kind for planting in the crevices of walls where its spreading shoots soon clothe the neighboring rocks with its verdure of beauty. Unlike many rock plants, it prefers a moderately moist soil with good surface and soil drainage. If then given a northern exposure or, otherwise, a little shade, it will thrive luxuriantly.

The aubrietia may be started from seed, cuttings, or division but it should not be moved except in the fall or earliest spring. Since the best flowers are produced on the old growth, any trimming of the plants should be done immediately after flowering, but never in the autumn or early spring.

There are several varieties of aubrietia that differ more particularly in the color of their flowers.

Baptisia australis

BLUE WILD-INDIGO

The blue wild-indigo is not as striking in flower as the gorgeous peony, the iridescent iris or many other brilliantly colored perennials. Nevertheless, it is dear to the gardener's heart, for as the years roll by it proves to be a most dependable long lived plant. It is a large, robust grower that succeeds best with full exposure to sun, but is otherwise so adaptable in any well drained soil and it flourishes so luxuriantly under such a wide range of conditions that it seems to be without even a sign of temperament. The roundish oval leaves, in groups of three, are bluish-green, while the indigo-blue, pea-shaped flowers are borne in large spikes much like those of the lupine. When it is in blossom, it is most interesting to watch the monster bumblebee, apparently the only insect heavy and powerful enough to force apart the tightly clasping petals that cover and protect its centrally hidden stamens and pistils. Landing on top of this central hood-like portion of the flower, the bumblebee, by its sheer weight and strength bends these protecting petals downward and outward, boldly exposing the stamens and pistil for pollination. Immediately after the bee has departed the clasping petals return to their covering position.

This plant forms a harmonious trio with the gay lupine, in white or pink, and with the aromatic dictamus, for it is with these late May and early June flowering perennials that it produces its floral display. Although the blue wild-indigo is difficult to transplant it is one of the longest lived of the hardy perennials if not disturbed. In many places where the lupine fails to thrive one may produce similar seasonal effects with this more adaptable plant. In late summer, the foliage blackens and becomes unsightly. Balloon flowers, asters, or other late growing perennials should be placed in front of them to obscure their untidiness at this season. On many of the lighter and less fertile soils of Michigan, and on farms, where watering facilities are not available, it should prove a very suitable flowering plant for the home grounds. It is generally propagated from seed, often sown in the permanent location.

Boltonia latisquama

VIOLET BOLTONIA

The boltonias are aster-like flowers that are admired for their wealth of bloom in late summer and early autumn.

The violet boltonia is treasured for the profusion of lavender-pink aster-like flowers that surmount its high growing leafy stems. Unlike the asters, its stems are angular, the leaves more lanceolate in form and of a lighter, more glabrous, steel-gray color. Compared to other boltonias, this species develops larger flowers of a more delightful color.

It is easily grown in any moderately fertile soil though it responds well to a rich soil and plenty of moisture. Growing to a height of four to six feet, it makes a desirable plant for the background of the herbaceous border and when thus arranged with light colored, lower growing hardy asters it combines to form very harmonious late summer and early fall effects. It is well to stake the plants if they are growing in a wind swept situation but otherwise it is so adaptable to many soils and situations that it is often used to plant areas too rough for cultivation. The plant is readily propagated by division and the flowers are excellent for cutting.

Variety *nana* is similar to the type except that it grows but from two to four feet in height.



Campanula carpatica

CARPATHIAN BELLFLOWER

From the Carpathian mountains in Austria has come this smaller growing species of bellflower so delicate and dainty in flower that it has been frequently called the Carpathian harebell. From late June throughout the summer its wealth of erect, bright, deep-blue, cup-shaped flowers, an inch and a half across, carried on delicate branching stems, lend their charming grace to garden scenes. In early season it is a neat, compact growing plant, forming dainty clumps of pointed-



Fig. 13. The bluebells of Scotland bloom from late June throughout the summer.

oval leaves with wavy edges. From these tufts of foliage, not more than eight inches across, are produced its much branched, wiry, flowering stems to a height of nine to eighteen inches, each terminated by one of these flaring bellflowers. Like other bellflowers it requires a rich well drained loam in full sunlight, but otherwise is easily grown.

The Carpathian bellflower is one of the best summer flowering plants for the rock garden. Its grace and freedom of bloom make it very desirable also for foreground planting in the herbaceous garden, as well as for cutting,

Fortunately it can be propagated readily from seed or by division and is benefited by light winter mulching. A white flowering form, usually listed as variety *alba*, and other choice selections are available for the connoisseur.

The top bellflower, a horticultural variety of *Campanula carpatica*, often listed as *Campanula turbinata*, is a dwarf, more compact form, considered by some to be preferable to the type.

Campanula medium

CANTERBURY-BELLS

It is a prepossessing name that graces this popular and dependable old time biennial. Since early days when this picturesque flower vied with the stately foxglove, the early red "pinney," the fragrant "clove-pink" and the old-fashioned sweet-william in the quaint colonial gardens, the Canterbury-bells has retained its general popularity as an admirable June flowering biennial. What a gorgeous color display is developed by repeated groups of these massive loose-spreading spikes of large bell-shaped flowers, in delicate pinks, snow whites, and blues of various shades!

When one considers the remarkable luster and clearness of the tints of this beautiful garden biennial as well as the intense popularity of the flowers in a cut state, he is not surprised that it has so successfully withstood the test of time. And then to learn that such an admirable flower can be so readily propagated and easily grown. Seed may be sown in outdoor seed beds in late spring or early summer and the seedlings transferred to their flowering quarters in early fall or very early spring. If planted in a good rich garden soil and given a bountiful supply of moisture during the flowering period the stalks of bloom will reach from two to two and a half feet in height and flower in June with the foxglove, sweet-william and garden pink.

The cup-and-saucer variety, *C. medium calycanthema*, is a somewhat more showy but less graceful form. The sepals, near the base of the flower, have grown together forming a saucer similar in color and texture to the corolla or petalous part of the flower. Otherwise, it appears similar to the type.



Fig. 14. Canterbury-bells.

Campanula persicifolia

PEACHLEAF BELLFLOWER

"Blue—blue—as if the sky let fall
A flower from its cerulean wall."

Before the Canterbury-bells have terminated their display this less showy but more graceful bellflower makes its welcomed appearance. It is in late June and July, when the heat from the sun becomes most intense, that the rich cool color of this peachleaf bellflower is most acceptable in garden scenes. Its shallow, flaring, bell-shaped flowers are closely ranged along its erect flowering stems which usually are a foot and a half or more in height. The specific name *persicifolia*, meaning peachleaf, refers to the similarity of the narrow toothed leaves to those of the peach in form and size. The crown leaves are borne in rather small, ground-clinging tufts, while the stem leaves, more abundant near the base, are even more elongated and grass-like.

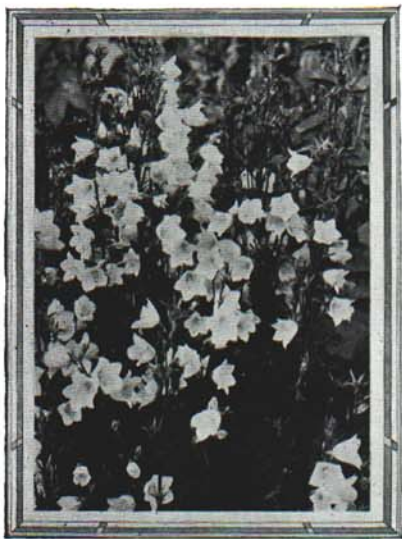


Fig. 15. Peachleaf bellflowers.

This graceful bellflower is easily cultivated in a rich garden soil with full sun. Under favorable cultural conditions, if the stalks are cut back after blooming it will flower a second time. It combines harmoniously with most other flower colors except the purples. The Shasta daisies, brown-eyed Susans, coreopsis, Madonna lilies, and many other seasonable flowers may be used with it in the herbaceous border. Since this choice perennial is selected primarily for its blue color, only enough of the white flowering type should be planted to accentuate the blue by contrast. It is propagated readily by seed or division.

Among the choice selections of this popular perennial are variety *alba grandiflora*, a large white flowering form; variety *Moerheimeii*, a double white form; and *Telham Beauty*, a large flowering blue variety.

There are several other species of bellflowers that are very desirable border plants. The chimney bellflower, *C. pyramidalis*, is a particularly attractive flowering species, with tall stalks of porcelain-blue or white flowers in late summer. It is not quite as hardy as the previous mentioned species.

The harebell, sometimes known as the Bluebells of Scotland, *C. rotundifolia*, is a dainty, small plant with numerous small, blue, bell-shaped flowers that is especially desirable as a rock garden plant.

Other species particularly desirable for the herbaceous border are *C. lactiflora*, *C. latifolia macrantha*, *C. glomerata dahurica*, and *C. punctata*.

Cerastium tomentosum

SNOW-IN-SUMMER

As great men sometimes arise from humble beginnings, this general favorite of the rock garden arises from the lowly, sometimes pestiferous chickweed genus. With the vigor and thriftiness of the less admired species that so commonly tend to monopolize our lawns and gardens, this aristocratic representative of the genus clothes the barren, soil-filled crevices between the rocks of our gardens, walls, and walks with the beauty of its dense silvery foliage that in late May and



Fig. 16. Snow-in-summer with its silvery grass-like foliage is particularly effective in flower.

early June is so completely surmounted by myriads of small white flowers as to appear as sheets of snow in summer. Through the heat and drought of mid-summer and the cold and storms of mid-winter, its enduring foliage steadfastly sheds its beauty over our gardens. Since it is so thrifty, vigorous, and ornamental at all seasons, it is one of the most satisfactory mat-forming plants for the beginner in developing a rock garden and is also much used as an edging or foreground plant in the herbaceous border.

Neighboring, less rampant plants may require the watchfulness of the gardener in preventing this ambitious spreading perennial from

usurping their domain. Since white is a quieting color, the flowers of this cosmopolitan perennial harmonize with all other colors and tend to lend harmony to the more discordant flower colors of the season.

The plant is readily propagated by division or by cuttings and thrives in any well drained soil of moderate fertility. It grows best in full sunlight but withstands partial shade.

Chrysanthemum coccineum

THE PAINTED LADY

The painted lady, resembling a painted daisy and appearing in early June is commonly listed as *Pyrethrum roseum* but is correctly known as *Chrysanthemum coccineum*. Though the colors of this delightful flower vary from white through the pinks to rich crimson, the bright pink and deeper colors are most common and popular. The flowers, about one and one-half inch in diameter, are borne terminally on erect unbranched stems about 18 to 24 inches high. Its multiplicity of bloom, attractive carrot-like foliage, and beautiful flower colors make it most desirable for early summer effects.

Flowering plants in the wild are the products of ages of evolution, of very gradual changes that have adapted them better to their environment and thus insure their perpetuation. Many changes in cultivated flowers are the results of selection and hybridization by man. In nature, the process of evolution, of change, is so gradual and occurs over such extended periods of time that it is difficult to discern these changes. With cultivated flowers in which these changes have been influenced by man's selections and hybridization work, they are often so abrupt and distinct as sometimes to be apparent in flowers of the same generation.

In the painted lady, the flowers were more commonly white, daisy-like blossoms, but the pink and crimson colored blossoms proved so popular that they were selected to the exclusion of the whites which are now almost a novelty.

It is a curious circumstance that the product of the natural evolution of this plant to make the flowers more attractive to insects for pollination should later prove a poison to them. In California, southern France, and Japan these attractive and apparently harmless flowers are grown commercially to be harvested and used as insect poison, known on the market as pyrethrum.



Fig. 17. The painted lady resembles a painted daisy, usually in bright pink or deeper colors.

and apparently harmless flowers are grown commercially to be harvested and used as insect poison, known on the market as pyrethrum.

The flower has been further modified to the extent that there are now both single and double flowering types. The double flowering pyrethrums are of almost infinite variety and are especially attractive as cut flowers. A rather unusual habit of the double flowering pyrethrums is to flower single or semi-double the first year after transplanting but the following year the flowers are fully double. If the double forms are propagated from seed instead of by division, a large proportion of them will prove to be singles and practically all will flower single the first year. Therefore, selections should be deferred until after the second season of flowering.

September is the ideal time to transplant them and they should be set in a well drained moderately fertile soil with full sunlight. Though June is their season of flowering, this period may be prolonged by keeping the faded flowers removed and by such cultivation, watering and other care as may be necessary to maintain their vigor and development. Of the several varieties available, Ne Plus Ultra is a double pink that is considered very desirable.

The painted lady is very effective in the foreground of larger growing perennials when arranged in compact, good sized masses but when planted in small scattered groups it is less effective.

Chrysanthemum hortorum

HARDY CHRYSANTHEMUM

In the chill of the fall days when spring flowers are but a memory and summer blooms are withered and dead, this queen of autumn, imbued with the gifts of each season, expresses all the freshness of spring, all the bloom and glow of summer, and all the wealth of autumn color. One might well believe that the plant was quite aware of its belated appearance by the wealth of bloom and the intensity and warmth of color that it so hastily brings forth to dazzle the eye. From early spring, when its young shoots first appeared above the lately frozen soil, through the heat and drought of summer, it has steadfastly been preparing for this period of bloom to cheer the fading year's decline. And then after it has bidden us farewell the memory of its beauty abides with us and as we sit by the fireside these sweet lines of Dr. Holmes arise in our thoughts,

"The full-blown flower
Of all the year—this evening hour—
With friendship's flame is bright;
Life still is sweet, the heavens are fair,
Though fields are brown and woods are bare,
And many a joy is left to share
Before we say Good-night!"

From a plant bearing a simple gold flower, the *Chrysanthemum*, whose name is derived from the Greek words *chryso*, meaning gold, and *antheon*, meaning flower, has developed into one presenting an infinite variety of colors and forms. With the single exception of blue, it clothes itself in a whole schedule of fashionably aesthetic colors and in such a complexity of forms as to seem almost inexhaustible in

variety. Through all of these vast and gorgeous modifications, however, it has retained its golden center, so that it is still the flower with the golden heart.

To promote the ideal development of this oriental flower, a well drained, wind-protected site, where the soil is both deep and rich, should be chosen. The Japanese were well aware of its voracious feeding habit and practiced an original method of fertilizing when choice blooms were desired. Bad eggs and dead birds were buried at the roots and each plant was allowed to bear but one blossom.

The culture of chrysanthemums begins in early spring when the old rootstocks should be dug and the younger shoots possessing roots should be separated and selected for re-planting. The soil in the planting area should be improved by thorough deep spading and fertilizing, by use of well decomposed manure, peat moss, commercial fertilizer, or such other material as may be required to render the physical and chemical condition of the soil proper for their growth.

Watering at least once a week during the dry spells of summer is very helpful. In late summer, many of the higher growing varieties need staking and tying to prevent the fall winds from blowing them down. Mildew frequently defoliates them in late summer, especially during moist weather; this may be prevented by dusting both the upper and lower surfaces of the leaves in early morning while they are still moist from dew, with sulphur dust. Aphids, or plant lice, which infest them, may be eradicated by applying a fine, mist-like, forceful spray of tobacco extract.

In late fall, after flowering, the plants should be cut back and mulched with clean, coarse straw, marsh hay, or some material that will not pack tightly over the plants and smother them.

The varieties commonly grown by the florists are not sufficiently hardy for wintering out-of-doors and require more skilled attention during the summer than would be given generally in the garden. The varieties usually listed as hardy chrysanthemums are very satisfactory and with moderate mulching are sufficiently hardy for garden cultivation. The garden varieties are generally multiplied by division, but frequently by cuttings.

The following standard varieties are recommended by Mr. Elmer D. Smith, of Adrian, Michigan, who has originated many of the varieties now being grown and is generally recognized as an authority.

The time of flowering is very important since it was a common fault of the old varieties to flower too late to mature their crop.

EARLIEST

August 20 and later

Decorative aster-like type

Amelia, bright pink.

Carrie, deep yellow.

Mrs. Phil Page, bronze.

Wolverine, bright yellow

September Queen, pure white flowers $3\frac{1}{2}$ inches in diameter—plant $1\frac{1}{2}$ feet high.

Yellow Normandie, bronze yellow.

MID-SEASON

September 20 to October 1

- A. Barham, orange bronze, two feet high.
- Evelyn, crimson to deep bronze, height 20 inches.
- Flash Light, bright crimson.
- Ganna, bright pink, height, two and one-half feet.
- Glada, soft pink, height one and one-half feet.
- Zaza, yellow with orange base, height two feet.
- Rosy Gem, bright pink, height two feet.
- Sonoma, bronze with golden reverse, two and one-half feet high.

LATE

October 1 to 20

- Brilliancy, bright red with yellow circle around disc, 18 inches high.
- Glomero, bronzy orange, height 23 inches.
- Muldoon, purplish amaranth, height two feet.
- Murillo, pink, height two feet.
- Natoma, bright pink, height two feet.
- Red Flare, bright red, height 20 inches.

POMPONS

Outdoor plants flowering before

October 20

- Early Bronze, orange bronze, height 20 inches.
- Ethel, bright red, height two and one-half feet.
- Irene, pure white, height three feet.
- Jewell, bright pink.
- Leilah, rose pink, height two and one-half feet.
- Margot, white.
- Marilyn, orange tan, three and one-half feet high.
- Minong, greenish white to pure white.
- Pink Dot, white with bright pink center, height four feet.
- Rodell, yellow, height three feet.
- Sarda, deep pink, height three and one-half feet.
- Wee Dot, bright bronze.

Chrysanthemum maximum

SHASTA DAISY

This white petaled, golden centered flower is like a common white field daisy that has been touched by a magic wand and mysteriously enlarged to three or four times its normal size. Unlike its wild prototype of the field, however, it is a stately flower that demands the fertility, moisture, and general garden culture for its best development and blooms more freely over a longer period.

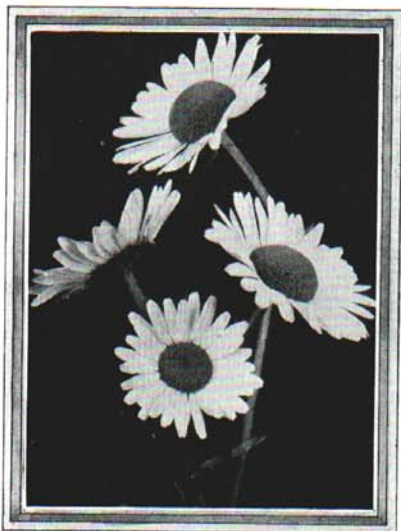


Fig. 18. Shasta daisy is one of the most popular daisy-like flowers of the garden.

The dark rich green leaf is elongated, sharply toothed, wedge shaped at the base but drawn to a point at the tip. The flowers are borne on upright stems, usually about two feet high, unbranched except near the base, and leafless for several inches below the flower. The plants bloom so prolifically that in early July or when they come into flower a mass of them appears as a sheet of snow-white color. This is a most satisfactory perennial where bold masses of white are desired. The diversity of species and varieties of this popular type of flower is now so great that one may have them bloom at almost any time from June to September.

Since white is harmonious with any color of the garden, one need not fear displeasing color combinations with Shasta daisy. In fact its color harmonizes with other flower combinations that are otherwise discordant. When associated with predominating amounts of such warm colors as those of coreopsis or anthemis mixed with sparing quantities of light blue larkspur or spike speedwell this snow-white daisy is helpful in developing warmth, brightness, variety and harmony to garden scenes.

Usually, however, white should not constitute the main color effect of a garden or of a large proportion of it, because when thus used it tends to produce a cold effect.

Many have found that this perennial winter-kills badly but upon well drained soils there should be little trouble in this way if good surface drainage is provided and the plants are properly mulched after freezing.

If but a few plants are desired, the Shasta daisy may be readily multiplied by division, but when a quantity is needed they should be propagated from seed.

The Shasta daisy is so desirable as a cut flower that florists use it considerably for bouquets, floral pieces and general decorative work.

Var. Alaska is one of the leading varieties for flowering in July.

Convallaria majalis

LILY-OF-THE-VALLEY

The lily-of-the-valley is a fondly treasured flower that for generations has been a symbol of purity, grace, and love, and, as such, has spoken so eloquently in life's greatest dramas. At births, weddings, and funerals it is this flower with its petaled lips and perfumed breath that speaks in beauty and fragrance the sentiments that are too tender for words. In the garden, this lowly plant abides in unobtrusiveness and grace, modestly clothing the less pretentious areas with its simple, dense leaves until its sprays of snow-white flowers appear through its sombre foliage. When thus seen thriving in rich moist soil, covering the surface under trees and other areas too shaded for grass, how delectable its dainty flowers appear!

Lily of the lowly vale
Where flowing stream and mist prevail
And shade of trees keeps sun-lit air
From casting warmth on growth so fair;
In such a wayward, lone retreat
That timid birds but shadows meet
Your dainty, scented bells appear
A symphony created here.

C. P. H.

The plant forms a dense mass of roots and foliage spreading rampantly to neighboring areas and making a good ground cover for rough, steep, or shaded places. It is also most adaptable for naturalizing in other wayward areas.

The rootstocks, crowns, or pips of the plant are thick, succulent and spreading, the larger being commonly terminated by buds from which new plants arise. These may be dug in the fall or early spring for establishing new colonies. Otherwise, the continuous production of new plants from these spreading crowns makes old established colonies so dense as to lack vigor for the best production of flowers. It thrives best upon a fertile loamy soil that is cool, moist and partly shaded.



Coreopsis lanceolata

LANCE COREOPSIS

There are many bright yellow daisy-like flowers of the garden but in many ways none is superior to the lance-leaved coreopsis. In richness of color, freedom of bloom and ease of culture it can hardly be surpassed by any garden perennial. From the middle of June, when its masses of deep golden flowers with distinctly notched petals make their initial floral debut, until late July, when the plant seems to have exhausted its energies in the production of such a continuous and prolific display, there is nothing that lends the garden such a delightful air of warmth and brightness. Fortunately, this attractive garden flower can be propagated readily from seed and easily grown on any moderately fertile soil.



Fig. 19. Lance coreopsis is a deep golden daisy-like flower.

white double-flowering yarrow, with a few light blue spiry forms of the spike speedwell protruding through and above them.

Picking the withered flowers and watering during extended periods of drought greatly prolongs the flowering season.

The big coreopsis, *C. grandiflora*, is an improved variety with flowers larger than the type.

When masses of it are seen in the foreground of dark foliated shrubs or mingling with masses of snow-white Shasta daisies, through which aspiring groups of cerulean larkspurs appear, how inspiring and cheerful the garden scene becomes! It is particularly attractive as a cut flower when its intensity of color is mellowed by close association with milder flower colors such as those of the billowy babysbreath or the

This golden-crowned plant should be situated where the sunshine will fully reflect the brightness and warmth of its flowers.

Delphinium

LARKSPUR

When spring merges into summer, the attractive spikes of the cerulean larkspurs make their graceful appearance in the garden. Tall, erect and stately, they compose most inspiring effects, especially when they are associated in repeated groups or masses with such other old time seasonable flowers as the foxgloves, Canterbury-bells, sweet-williams and Madonna lilies.

There are several species of these admirable larkspurs that vary in the height and size of the plants as well as in the color and other characters of the flowers. Though larkspurs as a class are old time garden flowers, hybrid forms have been recently developed that produce much larger and more compact spikes of flowers in a greater range of colors. This has given a great impetus to the popularity of their culture. These hybrid forms were first developed in England but unfortunately most of them were neither sufficiently hardy nor long lived for culture in this climate. More recently, selections have been made to attain these requirements so that many of the hybrid larkspurs now available succeed admirably in American gardens. Nevertheless, nearly all of the hybrid forms are shorter lived than the more commonly grown garden species of the past, such as the bee larkspur. The hybrid forms, however, are so superior in their flower characters where large high growing species are desired that they are well worthy of culture. They are attainable in both singles and doubles and in colors varying from the most dainty and delicate azure blues and lavenders to the deepest and richest blues and violets. There are also white and delicate pinks, dainty turquoises, and delightful amethysts. The range of these iridescent colors is so varied and elusive as to prove a most fascinating factor in their culture.

The larkspurs, especially the hybrid forms, are most robust growers, attaining a height varying from five to seven feet. Being so vigorous in their development, they are most voracious feeders, demanding an abundant supply of nutrients and of moisture. Larkspurs prefer a location where there is full sunlight and preferably where the soil is both deep and rich. On stiff clay soils, the plants are likely to winter-



Fig. 20. Larkspurs.

kill unless the soil is modified by providing good drainage and improving the texture by the addition of sand and manure or peat. They should be protected over winter by mulching with stable manure in the fall as freezing weather approaches. Early in the spring this covering should be removed and spaded into the soil about the plants. Otherwise, they should be fertilized with well rotted manure or with some form of commercial fertilizer that is comparatively rich in nitrogen. If leaf-spot, stem rot, or other fungus troubles appear it is well to avoid the use of manure and to use commercial fertilizer in its stead.

The larkspurs are commonly propagated from seed, except the named varieties, selections, and double sorts, which may be rooted from cuttings or propagated by division. The seed should commonly be sown directly after ripening or at least early the following spring since it loses its vitality if stored for more than a year.

Though the hybrid forms are most desirable where large flowering spikes of dainty colors are desired and where very robust, high growing plants are suitable, other species or types may be selected for special conditions. The belladonna larkspurs are lower growing plants with smaller flower spikes, but they are hardier and longer lived. Their flowers, of a vivid blue color with white centers, are much in demand by florists and with good care are rather continuous bloomers. The oriental larkspurs, *D. formosum*, were formerly selected and grown primarily for their deep blue flowers with white centers, but, in recent years, the variety bellamosa, a selection of the belladonna type with dark blue flowers and white centers, has been preferred. It is less subject to mildew and is of stronger growth. The Chinese larkspurs are a small growing type with very finely cut foliage and intense gentian blue flowers. They are very hardy and more particularly suitable for the small garden and for planting in the foreground of other flowers.

Dianthus barbatus

SWEET-WILLIAM

Through changing styles and changing fads and fancies, this old-time flower arrayed in its sedately fashioned tresses continues steadfastly along its unchanged way. Striving about the dooryard of the weary and less prosperous laborer or thriving luxuriantly in the fertile and more pretentious gardens it spreads impartially its note of cheerful greetings. How many work-worn women with beauty starved spirits have been re-inspired by its floral displays and how many dispirited ones will be heartened by its cheerful presence as the years roll on! Thus, this old-time favorite is treasured for its many kindly associations with the past as well as for its intrinsic floral worth which assures the perpetuation of its general popularity.

Like other members of the *Dianthus* family, it is not so particular about soil fertility as it is of a warm, sun-exposed situation where it may have good surface drainage, particularly over winter. On sandy soils it proves a true perennial but on clay soils it is biennial in habit although it reseeds itself readily if the old flower heads are not removed. It should be handled as a biennial, the seed being sown in the spring and seedlings transplanted in early fall to its flowering quarters.

Like the peony and the early spring flowering perennials, it makes a late fall growth which is retained over winter to be continued the following spring. Light mulching with straw or strawy manure after freezing weather is particularly beneficial in protecting this winter-green foliage.

The production of its numerous upright flowering shoots, which attain a height of about 18 inches, begins in early spring. Each is clothed with simple, rather broadly pointed bright leaves and each is



Fig. 21. Sweet-williams are very effective in the June garden.

finally terminated by a slightly rounded compact cluster of toothed and bearded flat flowers. These are presented in a great medley of colors varying from white to the deepest and richest crimons. In single and double petalous forms, in single and parti-colored its great range of variety is presented. Though it is generally grown in this great medley of colors and forms, one may obtain choice color effects by the planting of selected color strains. Some of these may be grown from selected strains of seed, while other choice colored varieties as Newport Pink may be purchased as plants, since they are generally propagated by cuttings or divisions.

The sweet-william is most desirable in garden composition when used with such other popular June flowering perennials as the garden pink, the foxglove, Canterbury-bells, and larkspur.

Dianthus plumarius

GRASS PINK

The grass pink, often called the garden pink, has been a universal favorite since the early colonial days, when it was sometimes better known by the name of clove pink. In those days, it was treasured as much for its rich clove fragrance as for the attractive color and form of its numerous graceful delicately fringed flowers. Since that time, it has been greatly modified in the direction of producing flowers that



Fig. 22. The grass pink or garden pink is a universal favorite.

are larger, doubled, and of a greater range of colors. Unfortunately, these changes have been wrought at the expense of the old treasured attributes of fragrance and hardiness. The bright colored double flowering forms are now selected by many for their more pretentious flowers, but the old single flowering type in white, pink, or rose is still to be preferred for garden effects where these qualities of hardiness and fragrance are most desired.

The plant has grass-like silvery leaves produced in dense tufts that make it rather effective in the garden even when not in

flower. It is very free flowering, producing masses of delicately fringed flowers borne terminally on erect slightly drooping stems about a foot high. It continues to bloom from early June for an extended period, particularly if the flowers are removed as soon as they begin to fade.

To be most successful in growing this old-fashioned pink, a spot in full sunlight where the soil is both warm and well drained, though not necessarily fertile, should be selected. It is important that the soil does not become too wet at any time, especially in the winter, as the plants are more often killed by too much ice about them than by severe temperatures during the dormant season. The single forms are readily propagated from seed. The double forms are more commonly multiplied by cuttings taken in the fall or by layering. Some of the double flowering varieties, however, produce a large percentage of doubles true to type when propagated from seed.

Since this plant withstands drought but requires excellent drainage it makes a good rock garden plant, although it is quite commonly used in the herbaceous border for edgings and foreground plantings. One commonly associates this hardiest garden pink with other old-time perennials as the sweet-william, foxglove, and Canterbury-bells, since

it is with these favorites that it flowers and develops such charming seasonal effects.

The maiden pink, *Dianthus deltoides*, is a diminutive, mat-forming, grass-like plant to a height of 6 to 10 inches, bearing myriads of small, solitary flowers, deep red with a crimson eye. It is especially suitable as a ground cover in the rock garden or as a dainty edging or foreground plant in the perennial garden. It is propagated from seed, cuttings, or division.

Dicentra spectabilis

BLEEDINGHEART

The bleedingheart is one of the many floral gems contributed from that ancient floral treasury of China. It was in 1843 that Robert Fortune discovered it flourishing in the intimate garden of a mandarin upon the island of Chusan, off the coast of northern China. It soon became a popular plant in English gardens and afterwards a most treasured garden flower in America.

One of the choicest memories of old time gardens are of this attractively foliaged plant surmounted in the spring by numerous graceful, drooping racemes of rose-colored, heart-shaped flowers. It commonly grows about two to three feet in height and its much-cut foliage is of a steel-blue green color. The plant has a tendency to die down after flowering but upon a deep, moist soil in partial shade the foliage is retained for a considerable portion of the season.

It is a desirable plant for spring effect, either in the herbaceous border or when naturalized in a moist, shady situation. In the perennial garden it should be interplanted with late summer or fall flowering plants. It is commonly propagated by division of the roots.



Digitalis purpurea

COMMON FOXGLOVE

The foxglove is an old time biennial that is intimately associated with the garden traditions and lore of the colonial period. Its delightfulness is as of an old masterpiece glamoring in the glow of its past, gleaming in its beauty of the present. About the middle of June, when its spiry spikes of bright finger-shaped flowers beam forth, it dominates the garden scene, and, by its strong vertical line effects, gives the appearance of stability and variety to the rambling herbaceous border.

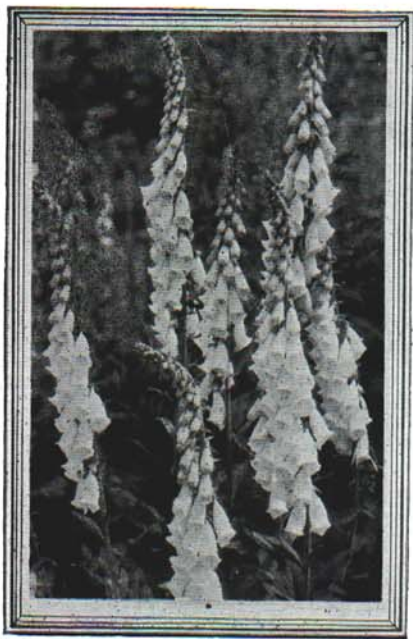


Fig. 23. The common foxglove lends its picturesque effect to the garden in June.

Fortunately, it is easily grown. Seeded out-of-doors in late spring and transplanted in early fall to its flowering quarters, it continues the development of its coarse crown leaves and spreading, fibrous roots until restrained by freezing weather. This coarse, downy foliage, remaining green all winter, is supplemented in the spring by the development of upright unbranched flowering spikes. While the growth of these is still incomplete, the lower flower buds of the spikes come into bloom to be succeeded by those above as the development of the flowering stalk is continued to four or five feet in height. This flowering habit tends to lengthen the blooming season which usually continues for about two to three weeks. The foxglove flourishes in a rich soil with an ample supply of moisture during the flowering period. Under these conditions, it thrives in full sunlight or partial shade and is much benefited by a

light covering after freezing weather in the fall, to prevent injury from alternate freezing and thawing of late winter and early spring.

Though the type color of these drooping flowers is a light purple with darker purple spots within, there are selections in light rosy-pink, pure snow-white, and light lemon-yellow.

When small groups or wayward colonies of these spiry forms are intermittently disposed in the background of the herbaceous border with occasional groups extending more boldly into the foreground, they lend a picturesque cheerfulness to the scene, especially when associated with such other old-time June flowering plants as the sweet-william, garden pink, and Canterbury-bells.

Erigeron speciosa

OREGON FLEABANE

The dainty *Erigerons* simulate in flower the beauty of the glowing native asters, but, unlike these tardy appearing perennials that await the waning of summer to make their floral debut, the *Erigerons* appear in early summer. It is late in June and early in July when these aster-like flowers with their golden centers and finely cut lavender petals spread their grace in our garden scenes. Previous to this flowering period the *Erigeron* has been a modest and unassuming plant. Since early spring it has been preparing for flowering by the production of a dense growth of upward and outward spreading stems clothed with plain, somewhat hoary, elongated, clasping leaves. When these rigid heavily-leaved stems have about reached their limit of growth, which is usually from one and a half to two feet in length, they break to form four or more flowering shoots, each terminated by a solitary sun-staring flower.

Though the plant thrives in any moderately fertile garden soil and in a full sunlit area, it is when sheltered from the mid-day sun that it lends its floral charms to our garden scenes for the longest period. Although comparatively cosmopolitan in every cultural requirement, it is very exacting in its color relations with neighboring flowers. Associated with rich reds, intense blues, or purples of almost any description it is most discordant but combines rather pleasingly with the billowy, white flowers of the babysbreath, the light yellow of the camomile, and such other delicate colored flowers as will not overwhelm the daintiness of effect created by its delicate lavender-petaled flowers.



Fig. 24. Oregon fleabane simulates in flower the beauty of the native aster.

Gypsophila paniculata

BABYSBREATH

The babysbreath is as ethereal and mist-like in flower as its common name implies, thus developing the delightful effects of delicateness and mystery in garden scenes. The generic name *Gypsophila*, meaning gypsum-loving, refers to its preference for calcareous soils, while the specific name *paniculata* has reference to the arrangement of the flowers in panicles.

The babysbreath is culturally one of those accommodating plants that, if given a site with full sunshine, thrives luxuriantly almost regardless of soil fertility and lack of moisture. Its roots are deeply penetrating and widespreading, but not greatly branched or fibrous. In addition they are very brittle, which doubtless explains why it is a rather difficult plant to transplant after it has once become well established. There is, however, no trouble in transplanting small plants if the roots are carefully dug and planted moderately early in the spring season. Doubtless these qualities of its root system also explain why with late fall plantings one sometimes finds them heaved out of the soil in early spring from alternate freezing and thawing.



Fig. 25. Babysbreath adds its ethereal gracefulness to bouquets.

Each succeeding growing season its numerous upright shoots with their narrow, grass-like leaves start from the central rootstock and finally attain a foot or more in height. On these upright shoots, are borne minutely branched, wide spreading, rigid stems which terminate in one of these diminutive white flowers. This billowy mass of flowers thus formed attains from two to three feet in height and remains attractive from early to late July. The plant is propagated readily from seed and is most effective when used with other flowers of bolder forms and of more stimulating colors. It is also a most graceful, ethereal flower for use in making bouquets.

G. paniculata floreplena, double babysbreath, is very hardy, long lived, larger and more attractive flowering than the single form. It may be propagated from seed, selecting out the double flowering seedlings after the first season of flowering.

Var. Bristol fairy is a double flowering form much larger and more effective in flower than the previous variety. It is propagated by grafting upon seedlings of the single form but unfortunately dies after three or four years. It is a most desirable variety for cut flowers and florists work.

Gaillardia aristata (grandiflora)

COMMON PERENNIAL GAILLARDIA

Many flowers seem to typify and reflect the human tastes and characters of the people of their native countries. The golden-bells seem to reflect the splendor of the Oriental, the lilacs the dignity of the European, and the flowering dogwoods and wild roses the simplicity and democracy of the American. Here is a flower native of the west and southwest, that seems to reflect the primeval splendor of the American Indian who roved and dominated these lands; not alone by its colors of gold and scarlet, simulating those of the Indian blanket, whence it is often known as the blanket flower, but also by its wayward habit of growth, avoiding confinement in one spot and submission to the general amenities of tidiness and orderliness. It also simulates its migrant cohabitant in being most adaptable to a wide range of soils and climatic conditions.

This daisy-like flower with its wide flaring petals, scarlet toward the center but golden yellow beyond, is readily propagated from seed. For most effective garden display, it should be handled as a biennial and planted rather closely in masses, the boundaries of which should be rather definitely confined by other moderately high growing perennials. Its desirability is measured as much by its continuous blooming from June throughout the season, as by the stimulating color of its numerous flowers.

It is one of the most productive plants of the garden as a source of cut flowers, since one finds at least a few available for this purpose



Fig. 26. Common perennial gaillardia.

over an extended period, particularly if the old flower heads are removed and the plant kept growing vigorously by good culture.

Helianthus orgyalis

WILLOW-LEAVED SUNFLOWER

The sun-loving, sun-staring sunflowers grace our gardens, roadsides, and fields with their yellow daisy-like flowers in late summer and fall. Many of the species used as garden plants are coarse leaved, coarse branched, and coarse flowering perennials but this particular species is less coarse in foliage and flower and is a very distinctive and admirable one. Its unbranched stems eight to ten feet high are very thickly covered with narrow drooping leaves eight to sixteen inches long which make a very attractive fine-textured foliage effect. The lemon yellow, daisy-like flowers appearing in September and October are disposed in loose terminal clusters some two to four feet long. Like all of the other perennial sunflowers, it delights in a light dry soil, in sun warmth and free skies. Unlike its associates, it is intolerable of acid soils, which doubtless explains the failure of many in maintaining this willow-leaved perennial sunflower.

Such a boldly aspiring perennial is most suitable for accentuating a distant corner of the garden or other distant background area, since its strongly contrasting habit of growth and fine textured drooping foliage tends to make it dominate its immediate surrounding. The plant is commonly propagated by division and is improved by redividing and replanting every few years. Unlike most other perennial sunflowers, it does not spread from its roots and hence is not troublesome in keeping it confined to its allotted area.

Heliopsis helianthoides

PITCHER HELIOPSIS

The heliopsis much resembles in foliage and flower the later appearing perennial sunflowers. Unlike them, however, it flowers in late July and August and also unlike them it attains a height of but three to four feet. It may be differentiated from the sunflowers by the fact that when an outer ray of the flower is removed the pistil or later forming seed adheres to the base of the petal, which does not occur with the sunflowers. For the garden, this plant is treasured for its vigorous habit of growth and its wealth of golden yellow flowers, some two inches or more across, that fairly cover the plants. It will grow in poor soils but does much better where an ample supply of moisture and food is available during the flowering season. The plants grow in clumps and are easily multiplied by division, as well as from seed.

They are very effective for planting in the foreground of shrubs as well as for summer flowering effect in the herbaceous border. They naturalize readily and require but little care.

Of the other choice species and varieties available, the double flowering heliopsis known as the zinnia heliopsis is a most desirable selection, being attractive in flower over a longer period than the single form.

Hemerocallis

DAYLILY

Years ago the daylilies had their passage paid across the ocean to grace American gardens but have since, through many a garden fence and gateway, escaped their keepers to enjoy the freedom of wildlings along the country roadsides. Often, about the door-yard of the deserted farm it still thrives persistently, proving the last vestige of a habitation and of the wish of the pioneer for a sweeter and kindlier home.



Fig. 27. Lemon daylilies.

Beautiful only for a day, each flower fails at eventide, to be succeeded by another, fresh and resplendent, the following morning. Thus these yellow and orange lily-like flowers, borne in clusters on leafless upright stems, two to four feet high, continue their flowering effect over a prolonged period. The foliage also is distinctive, being arranged in compact clumps or masses and composed of light green, limp, narrow, grass-like leaves about 18 to 24 inches in length.

All of the species are perfectly hardy and easily grown but flourish best in a moist, rich soil, in partial shade. For naturalizing along a flowing stream or woodland path they are most suitable but they also adapt themselves readily to the well cared-for herbaceous garden or the less cultivated borders of shrubbery plantings.

The lemon daylily, *H. flava*, deriving its name from the delightfully fragrant lemon yellow flowers, that appear in June, is one of the best varieties for the garden. Used with pale lavender iris, white columbines or garden pinks it proves very effective.

The Japanese daylily, *H. thunbergi*, is very much like the lemon daylily but its flowers appear about a month later.

The tawny daylily, *H. fulva*, is characterized by its orange colored flowers appearing successively in July. It forms dense clumps of strong growing foliage and spreads by underground rootstocks too aggressively for general garden use. The variety known as Kwanso is a double flowering form that blooms somewhat later and over a longer period than any of the singles.

There are many new species and hybrids now being introduced, some of which promise to prove superior in flowering qualities to the present known garden species.

Heuchera sanguinea

CORALBELLS

Coralbells is a name that fittingly describes the color and form of the dainty bells that grace the airy panicles of this admirable, low growing perennial in late May and June. The foliage of this plant is almost as attractive as the flowers. Growing in a thick tuft its rounded heart-shaped leaves, scalloped about the edges, and rich green in color, are very decorative. In late fall or early winter, when these leaves have turned to a rich reddish bronze they are particularly beautiful both in the garden and in vases as accompaniments to other flowers.



Fig. 28. The coralbell blooms from late May through most of the summer.

This dainty leaved and dainty flowering perennial is particularly suitable for growth in small colonies between or in front of more striking flowering sorts, to develop the less showy but more charming detailed effects. It is very attractive also as a rock garden plant and the sprays of bloom, borne on leafless stems about a foot and a half high, are excellent for cutting.

The Coralbells flourish in a moderately rich, moist, sandy loam soil in full sun or partial shade. They need the protection of a straw mulch over winter and after a few years are im-

proved by redividing and replanting. This should be done in early spring.

While the type color of this flower is coral red, there are many choice varieties in shades varying from white to rose pink or coral red and to dark crimson. It may be propagated from seed or by division.

Hosta plantaginea grandiflora

BIG PLANTAINLILY

The big plantainlily, though it possesses neither the grace and daintiness of the airy columbines nor the flamboyant colors of the boldly flaunted poppies, is a stately, dignified and noble appearing plant over a long period of the growing season. How effectively its massive, heart-shaped, yellowish-green leaves, so compactly and tidily arranged, dominate any particular scene they help to compose, and how cheery their waxy-white lily-like flowers, peering above this verdant foliage, seem when lighting some partly shaded area of the garden! Like those of the daylilies, with which it is often confounded, its fragrant flowers, so sweet as to be almost overpowering, exist but for a limited time, to be succeeded by others of the same cluster. Like them also, if situated in partial shade where the soil is both deep and rich it improves as the years go on and becomes a permanent fixture of the garden. The immense size and brightness of the leaves make this popular species of the plantainlilies more particularly suitable for accentuating important points or distant areas, for the development of stability of effect about corners and for planting about the house in situations too shaded for many other perennials, since it is one of the few kinds thriving in shade that is attractive in both foliage and flower.

This plantainlily is more particularly suitable for cultivated and formal effects than for informal or naturalistic developments, although it requires but little cultural attention when grown in a favorable soil and situation. The leaves, however, are very likely to burn and become unsightly in midsummer unless it receives plenty of water. Like other plantainlilies it is readily propagated by division and like them also it rather suffers from being disturbed when once established.

There are other species and varieties of plantainlilies, some of which are larger and darker leaved with smaller spikes of mauve or blue drooping flowers, while others are smaller in stature, with smaller and more lanceolate leaves. The wavyleaf plantainlily is a choice variety of this latter type with attractive wavy-edged, variegated leaves and is especially suitable for formal edgings or dainty groups in the foreground of other perennial plantings.

Iberis sempervirens

EVERGREEN CANDYTUFT

The hardy evergreen candytuft, native of Iberia the ancient name of Spain, is commendable for the rock garden and for an edging or foreground plant in the herbaceous border. Like many of the other woody-stemmed evergreen perennials, it starts its new growth very early in the spring, producing many upright shoots some four to six inches long, each terminated in early May with a flattened dense cluster of small pure white flowers. The flowers about the rim of each cluster open earliest, each with its small group of stamens giving the effect of a yellow center. As the flower cluster further develops and the more central flowers open, these outer blossoms drop their stamens

but, instead of the petals withering and falling away, they retain their freshness and whiteness and seem to enlarge. This rather unusual flowering habit makes the plant effective over a rather extended period. At other seasons of the year, the dense narrow leaves of bright green make the plant an effective ground cover.

This hardy candytuft is upright growing to a height of about nine inches and is somewhat spreading. It prefers a moderately fertile but well drained soil with full sunlight or partial shade and a moderate supply of moisture. It is commonly propagated from seed or cuttings, but once established it should not be disturbed. For early spring effects this plant, less spreading, rivals the beauty and effect of the rock cress. It may be used effectively in the rock garden with the early blue phlox, the moss pink, the purple aubrietia and the golden alyssum. In the herbaceous border it makes a good edging plant and for foreground plantings where something dainty to be seen at close hand is desired it is very suitable.

Iris

The beauty of the iris is not as that of the gorgeous and striking peony or of the boldly flaunted color of the great Oriental poppy, but rather, something refined and delicate.

The floral parade of the irises begins in April with the diminutive *pumilas*, making an inspiring picture with the tulips, daffodils, and other early spring flowers. This dwarf, early flowering iris is soon followed by the intermediate forms with ever increasing size and boldness of color. About the middle of May one awaits expectantly for the great *Germanica* family of the bearded iris, in its broad masses of deep blue, purple, brilliant yellows, pure white and their intermediate hues. From then until the latter part of June the great number of species and varieties of this most vari-colored flowering group characterizes many of the most beautiful American flower gardens. When at last the tall light blue *Dalmaticas* and their associates have passed and the season of iris seems completed, the Oriental Japanese iris, the crowning glory of all, arrayed in royal purple, lavender, blue, pink, or white, presents the final display of the iris season.

The bearded iris is distinguished by its broad, stiff, sword-like leaves and stately flowers that develop three large upright incurving petals called standards and three larger golden-bearded, drooping petals called falls, which are sometimes of the same color as the standards but more frequently different. Varieties of this class are vigorous, hardy, and thrifty. They are usually the most satisfactory for the garden, flourishing if given a site where the soil is fairly moist and moderately fertile. While the plants are long lived, they do better if the clumps are divided every three or four years. Transplanting should be done in late summer, and it is well to know that the large tuberous roots are surface feeders and should not be buried deeply in transplanting.

This iris is a standard decorative garden plant desirable for the flower garden, formal or informal for massing in the foreground of shrubbery as well as for grouping in the various nooks and corners of the home grounds. The dwarf bearded iris and the intermediate forms seem most appropriate on sun-exposed spots in the rock garden or for foreground planting in the early spring herbaceous border. For

naturalizing about ponds, where the soil is moist or poorly drained, the Siberian and European iris are most adaptable.

The Japanese iris, with its long, narrow, gracefully drooping grass-like leaves is very distinctive in the season, form and color range of its flowers. Appearing in July, the flowers are unusually large and flat-topped. This distinctive flower form is due to the small growth of the standards and the very large flaring development of the falls. The colors, varying from rich royal purple through the blues to the white on the one hand and from the deepest claret reds through the pinks to white on the other, constitute a most bountiful selection of colors filled with the most delicate and daintily tinted varieties. Though the



Fig. 29. The German or bearded iris characterizes many of the most beautiful American flower gardens.

plants of this species may be propagated readily from seed, the marvelous results of Japanese hybridists are obtainable only in the selected strains that are perpetuated by division. Hence one must purchase plants of these choice Japanese varieties to appreciate the inherent beauty of these improved sorts. For the flower enthusiast interested in the culture of some worthy, less commonly cultivated, group of plants, they offer a desirable subject, but for general planting they lack the hardiness, adaptability and thriftiness of the German or bearded group. This oriental strain requires a well drained, fertile, loamy soil in full exposure to sun, and an abundance of moisture before and during the flowering period. After freezing weather in the fall, it is much benefited by a bountiful covering of straw or strawy-manure, to remain until the soil thaws out in the spring, because otherwise it is not winter hardy.

Most of the better varieties are still being sold by their Japanese names. Purple and gold, one of the exceptions to this rule, is one of the hardiest and most thrifty varieties and one of the best for the beginner.

Of the many beautiful varieties of German iris now available the following are considered to be exceedingly desirable.

Ambassadeur, standards velvety purple; falls purple maroon.

Asia, standards pale lavender; falls light violet-purple.

Ballarine, standards light blue-violet; falls deeper blue.

Crusader, standards clear, light blue-violet; falls a deeper shade of blue-violet.

Isoline, standards pale pinkish buff; falls Chinese violet.

Jubilee, standards and falls light buff, margined with flecks of dark copper.

Lent A. Williamson, standards campanula-violet; falls velvety violet-purple.

Lord of June, standards chicory-blue; falls lavender-violet.

Magnifica, standards light violet-blue; falls rich violet-red.

Mother of Pearl, standards and falls pale bluish-lavender with faint creamy undertone.

Morning Splendor, standards petunia violet; falls rich raisin-purple.

Nimbus, standards light lobelia-violet; falls rich velvety-violet.

Princess Beatrice, standards blue-violet to light lavender-purple; falls pale bluish violet to lavender.

Silver Ribbon, rich fuchsia purple color of heavy velvety texture.

Susan Bliss, uniform shade of deep rose pink, with light orange beard.

Wild Rose, daintily colored pink flower with silvery finish.



Liatris pycnostachya

CATTAIL GAYFEATHER

—The cattail gayfeather, sometimes better known by the names of Kansas gayfeather or blazing star, is characterized by its bold, wand-like spikes of purple flowers that spread their effect of gaiety throughout our gardens from late July to early September.

These aspiring unbranched flower spikes, four to five feet high, are densely clothed with slender, light green grass-like leaves that make an attractive foliage effect. The small, purple, button-like flowers that terminate each wiry stem are compactly arranged in untapered spikes of a foot to 18 inches. Unlike other kinds of flowers, these have the unique habit of blooming from the top of the spike downward, and fortunately remain in bloom over a prolonged period. In sunshine or partial shade these plants seem to flourish equally well and though they grow and flower in poorer soil than most garden plants require they thrive best in a good, rich soil. Otherwise they require no special care. They may, therefore, be readily naturalized against a distant mass of shrubbery or arranged in repeated groups about the herbaceous border, where the contrasting form of their brilliantly colored flower spikes lends a cheerful picturesqueness to their surroundings in late summer.

They may be readily propagated by offsets from their corm-like base or started from autumn-sown seed. When they become well established plants and are attractively arranged in repeated groups or masses they prove one of the most showy and attractive features of the late summer garden and on upland soils are generally preferable to the purple loosestrife as garden plants.

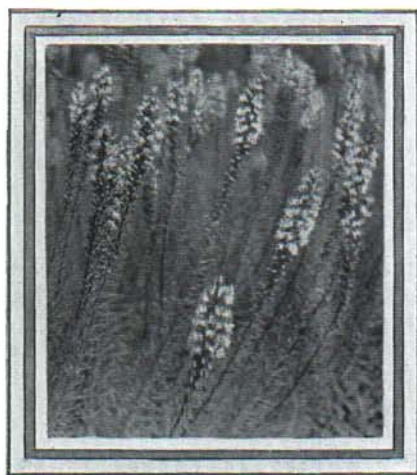


Fig. 30. Cattail gayfeather with its spikes of purple flowers.

Lilium candidum

MADONNA LILY

With all stateliness and grace this loveliest of lilies comes each summer to assume its appropriate place as queen of all garden flowers. The Madonna lily is one of the oldest flowers in cultivation. In old mythology it was supposed to have sprung from the milk of Hera, queen of Heaven. All through the Middle Ages this ancient lily was the symbol of feminine purity and heavenly grace. In Roumania, a superstition existed to the effect that:

Show me a garden where lilies grow,
I'll show you a house where the
Plague will not go.

Maeterlinck, refers to it as one, "whose nobility dates back to that of the gods themselves". Is it strange that, being held in such esteem, it was adopted by the church at a very early period of the Christian era and given the sanctified name of Madonna, the Italian name for the Virgin Mary.

Thus for many centuries,
It spread its spiritual grace,
Enobling man's emotions
And God's most holy place.

How transient is our being,
How meagre human powers,
Compared to this fair lily,
Queen of garden flowers.

Tall, erect, and stately, with its fragrant, trumpet shaped blossoms in late June, it creates such an inspiring effect as to arouse general admiration. Small colonies of this attractive flower protruding above the foliage of lower growing plants enable it to expose its form and grace most advantageously. When it is arranged in wayward groups in the foreground of shrubbery the intense pure whiteness of its flowers becomes very striking, while it also removes the summer dullness of the bushy and sprawling fine-leaved evergreens when its cheerful flowers appear rather unexpectedly over-topping their sombre, dark green foliage.

The cultural requirements of this old time lily are rather simple. It grows in any ordinary garden soil that is well drained. The plant prefers an open sunny situation but will thrive in partial shade. The bulb should be planted in early September without fertilizer but with sharp clean sand immediately below and above the bulb; it should be tipped slightly on its side with the top of the bulb about two inches below the surface. After the plant is once established, it is injured by disturbance of the roots and hence should not be deeply cultivated or transplanted. This is one of the few lilies that is tolerant of lime in the soil and that thrives better in a clay loam than a sandy loam soil. It is much benefited by mulching over winter with well rotted manure, straw, or litter and also by summer mulching with peat, though this latter is unnecessary where the soil is shaded by other foliage growth. Manure or other organic matter should not be brought into contact with the bulb as it is likely to promote the development of a fungus disease causing the bulb to rot. Dusting the bulbs with powdered sulphur before planting tends to prevent the development of this trouble on newly planted stock.

Lilium elegans

Lilium elegans, apparently devoid of a standard common name, constitutes, together with its numerous choice varieties and closely associated species, the best group of red lilies of the garden. They are all easily grown and adapt themselves readily to a wide range of soil conditions. They grow well in any sun-exposed spot, in light sandy as well as stiff clay soils, but are much improved when such soils are enriched with stable manures or other materials that improve fertility and texture. They flourish in soils that retain moisture and that are shaded by a mulch of peat or by the foliage growth of neighboring



Fig. 31. *Lilium elegans*.

plants. Well rotted manure may be well mixed in the soil at planting time or used as a mulch thereafter but special attention should be given in planting to see that no organic matter comes into direct contact with the bulb. Usually the bulbs are planted in the fall, each to a depth of nine inches with about two inches of sand below and about the bulb to prevent organic matter coming into contact with it. The bulb may be set in a slightly tipped position for drainage.

The plant is rather dwarf, attaining but a foot and a half in height. In late June and early July, its large, erect trumpet shaped flowers, of orange red color but slightly spotted purplish black, come into bloom. There are so many closely related varieties that vary principally in

shade and richness of color, as well as in size of flower and season, that they are now greatly mixed in the trade.

After the flowering period, the foliage dies back leaving bare areas. For this reason, *Lilium elegans* is more suitable for interplanting with other heavy foliage perennials that shade the soil about its roots and form an appropriate foliage background for the brilliant flowers. When thus appearing through a colony of rich leaved *Funkia* or lighting up some distant sombre corner of the garden they are most impressive but their stimulating color is so intense and insistent as to be less peaceful and harmonious in the presence of most other garden flowers.

Unlike the royal lily, this species does not produce seed but is propagated by offsets and by the separation and planting of the bulb scales.

There are many varieties of *L. elegans* now available and although this species is particularly valued for its intense red flowers, there are varieties in colors ranging to pure yellow and to deep mahogany. There are also other species, of the *L. elegans* type in growth and flower, that appear at other periods of the season. Of these, *Lilium umbellatum* is by far the earliest and is followed by *Lilium bulbiferum* which precedes *Lilium elegans*. *Lilium batemaniae* is an apricot-shaded lily that succeeds *Lilium elegans* and is followed in late July, by *Lilium wallacei* with flowers of a deeper apricot color with dark spots.

Lilium regale

ROYAL LILY

Royal lily is a most befitting title for this glorious and striking garden plant. When its many deliciously perfumed flowers spread their splendor over garden scenes, the regal grandeur of this recent oriental introduction to American gardens is appreciated. Though it was as late as 1903 that Mr. Wilson discovered this royal plant in North-central China, it has already demonstrated its position of leadership as one of the hardiest, largest flowering and most beautiful lilies in cultivation.

Favored by loam and sunshine, it is otherwise the least particular of the lilies, for it thrives luxuriantly under a wide range of soil and climatic conditions. Unlike many other lilies, the bulb should be planted in early spring. It will not root when set in late fall until the following spring. Hence the bulb is likely to rot if fall planted. Most lilies root at temperatures between 50°-55° F. but this kind requires a temperature of 70°-75° to promote rooting. As with other stem-rooting species the bulb should be set at a depth of about nine inches. The soil should be well drained and preferably of a rich sandy loam type.

Under such conditions it is a vigorous grower, sending forth its hard, wiry, slender stems to a height of from three to five feet. Along these are thickly scattered its extremely narrow, deep green, horizontal, recurved leaves. The large trumpet flowers, purple without but white within, except for the central portion of the flower which is flushed with yellow, are produced in profusion, particularly on thoroughly established plants. This lily, unlike many others, does not drop its pollen, thus retaining a tidy appearance over the full period of bloom.

It is also one of the lilies most readily propagated from seed, although flowering sized bulbs should be purchased for flowering in the herbaceous border. The flowers appear from early in July to early August.

Since lilies take but a minimum of soil and air space, they are most suitable for interplanting between earlier or later growing perennials, and for planting between or in the foreground of shrubs. They appear most effective when provided with a heavy background of foliage and arranged in repeated groups of five or more throughout the garden. They are especially attractive when assembled with delphiniums and other harmonious July flowering perennials.

Lilium speciosum

SPECIOSUM LILY

Originally a native of Korea, but now deservedly one of the favorites of American gardens, this showy lily awaits the waning of summer before it shares its floral beauty in our gardens. It is late August and September when these widely opened, but beautifully formed flowers graciously spread their charming colors about the garden. Their white reflexed petals, suffused with rose-pink and spotted with deeper rosy-red, are rolled back so far as to expose boldly their graceful, elongated styles and clusters of diverging stamens upon which their red anthers are so delicately poised. When a dozen or more of these most delicately fragrant and daintily enriched flowers are carried pendently in tall pyramidal clusters some two to four feet high, they seem to reflect the vigor and well being of life at this joyful season.

Though this late flowering lily lays no great tax upon the ingenuity of the planter, it is generally less successfully grown than many of the other garden lilies. The bulb should be set some 10 to 12 inches in depth among ground-shading shrubs or perennials and in soil that is well drained. It is an accepted fact that this lily prefers a soil free from lime and, since its roots are wide spreading, it flourishes in a top soil that is mellow, rich, cool, and moist, because the development of the stems and flowers depends upon the development of these ramifying roots. A mulch of leaf mold or peat greatly favors their development in soil that is exposed to the sun.

This lily is so gracefully formed and daintily colored that it is particularly suitable for nearby effects and hardly needs the association of other flowers to contrast or lend variety to its pleasing presence. It is also a most excellent source of cut flowers.

Var. *Album* is practically white.

Var. *Melpomene* produces deeper colored flowers.

Var. *Rubrum* and *roseum* are very similar to the type but have flowers somewhat deeper in color.

Lilium tigrinum

TIGER LILY

The tiger lily is one of the most easily grown, hardiest and most permanent of the lilies. Large, vigorous and stately, its upright flowering stems, heavily clothed with dark green, thin, pointed leaves, attain four or five feet in height before the recurved, bright orange-red flowers



Fig. 32. Tiger lilies.

appear in August. These, numbering from one to fifteen, are so conspicuously spotted with purplish black as to suggest the derivation of its common name. Like most garden lilies, it thrives best when set nine inches deep in a well drained and well enriched soil that is kept cool and moist either by shade of other plants or by top dressing of peat or other mulch.

This lily possesses the unusual habit of forming little bulbs at the base of the leaves which may be planted as seed and will produce bloom in the third or fourth year.

The flowers are most effective when arranged in colonies about the herbaceous border for distant effects or when seen in masses against a background of shrubbery. They may also be effective about the herbaceous border when interplanted between peonies or other earlier flowering perennials.

Var. *splendens* is a stronger growing and larger flowering strain blooming somewhat later.

Var. *double tiger*, *L. tigrinum florepleno*, is the same as the type except that the flowers are double.

Lilium willmottiae

This beautiful lily was introduced from China and although little known promises to prove one of the most popular and generally satisfactory kinds for garden planting. It has proved to be of a strong and vigorous constitution and perfectly hardy. Ordinarily it grows to a height of 4 to 6 feet. The flower stems are heavily clothed with dark green, slender leaves and the whole plant is of a distinct and attractive habit.

The flowers are about three inches across with recurved petals of a bright, attractive orange-red color. They are arranged in large flower heads with about fifteen to thirty blooms to a large, open cluster. Their extended season of bloom, from early to late July, is one of their distinctive admirable qualities.

This lily is stem-rooting and should be set about eight inches deep. It is propagated readily both from bulbs and seeds.



Lupinus polyphyllus

WASHINGTON LUPINE

In olden superstitious times it was noted that the lupines grew in poor, infertile, and barren soils. From this it was inferred that they destroyed soil fertility. Hence they were given this derogatory name



Fig. 33. Lupines are readily propagated from freshly matured seed.

derived from the Latin word *lupus*, meaning wolf. Now, on the contrary, it is known that these legumes, as others of their class enrich the soil, and some species as the yellow lupine and white lupine, are grown on infertile soils to be plowed under and enrich them. The lupines are otherwise deceptive in that, although they are leguminous plants and should, by the usual requirements of this class, demand an alkaline soil, they are said not to succeed in soil containing a surplus of lime. As a garden plant, this particular species is treasured for its stately spikes of pea-shaped flowers that rise above its satiny palmate leaves which have the interesting habit of "sleeping". Though the flowers of most of the lupines are blue, this species has varieties that are of pink and white, making very attractive color harmonies in late May and June.

The plant is unusually desirable for arrangement in groups and masses in the foreground of shrubbery for distant effects and is readily adaptable to moist acid soils. Since it does not stand transplanting well, and propagates readily from seed, the seed may be sown directly in its permanent location.

Though it is perfectly hardy, it cannot withstand drought and must be watered in dry weather.

Var. *Moerheimii* is the best variety in bright pink and rose to white. It is one of the most attractive garden flowers of its season.

Lychnis coronaria

ROSE CAMPION

The rose campion, a common inhabitant of the old gardens, was frequently known by the quaint names of mullein pink and dusty miller. In those days, when people had less leisure for caring for their garden flowers, such plants as this, prospering with little attention even on light infertile soils and withstanding the heat and drought of summer, were most popular. So today, where an attractive flower display is wanted during the summer months and where the soil is light and watering facilities limited, this thrifty plant, with its numerous rich crimson flowers, is still highly desirable.

The plant, upright and rigidly branched with downy stems and silvery leaves, attains a height of about two feet. Each of the many forked stems is terminated by a circular strikingly colored flower about an inch and a quarter in diameter. The flowering effect of a mass of these plants is very striking and continues over a prolonged period of the summer. The plant is so readily propagated from seed that it is often handled as a biennial, especially in clay soils.

Varieties now available produce flowers of other colors, the white



Fig. 34. Rose campion, a most desirable perennial where watering facilities are not available.

flowering one, used sparingly, making a desirable variation with the crimson. Otherwise, the intensity and richness of the crimson flowers clash with other red or purple flowers of the garden. However, the blue of the spike speedwell or of the bellflowers, the white of the garden phlox and the yellow of the daisy-like flowers of coreopsis and of camomile will not prove displeasing with them.

Lychnis chalcedonica

MALTESE CROSS

The Maltese cross is one of the most vivid, intense, scarlet-colored flowers of the garden. In fact, this fiery red color is so characteristic of this old garden plant that it has often been known as scarlet-lightning. The flowers, borne, in close, slightly rounded terminal clusters are from one-half to an inch in diameter and are five petalous, simulating the form of a Maltese cross. Each flaring petal is also typically notched at the center of the outer edge, making it very distinctive in form. Though the type color is scarlet, there are selections in white and rose.



Fig. 35. Maltese cross with its scarlet colored flowers.

The ease of growing this flaming colored flower has made it popular about the home grounds, since it adapts itself so readily to stiff clay, to light sand, or to other soils too infertile and dry for many cultivated perennials. It is readily propagated from seed or division, and given full sunlight it will shower its stimulating colors over the garden from about the middle of June to late July.

The plant is an erect stemmed perennial with rather small, pointed, somewhat hairy leaves and attaining a height of about two feet. In the home grounds it

is suitable more particularly for planting in front of shrubbery or in the herbaceous border for distant effects. Its color is so intense, however, that it should be kept well away from other reds or purples.

There are other species of *Lychnis* that are also desirable. *Lychnis viscaria splendens flora plena* is a fine species, while *Lychnis alpina* is a good plant for the rockery. *Lychnis arkwrightii* develops large brilliant scarlet flowers, while *Lychnis flosculi* is better known by the name of Ragged-robin. *Lychnis Haageana* has large brilliant orange-scarlet flowers shaped like the Maltese cross.

Lythrum salicaria

PURPLE LOOSESTRIFE

The purple loosestrife is not a shrub and yet, it is hardly a perennial, for while it dies back, perennial-like, to the ground each succeeding fall, it possesses very woody, shrub-like roots and, when its vigorous willow-leaved shoots develop, the plant presents a dense shrub-like appearance. Later, when each of these densely crowding shoots is terminated by a bold spike of gay purple flowers held proudly above its dense foliage the effect is most inspiring. Few purple flowers are more pleasing in effect or more freely produced from early July until early August, and few are more effective in removing that summer dullness which often prevails in our landscapes after most of the shrubs have terminated their flowering period. Naturally, therefore, one uses and associates this plant closely with the shrubs, but it is at the height of its floral display when thriving luxuriantly in wayward colonies about the moist, low-lying shores of a placid pond or lighting gaily a sombre meadow with its multiplicity of purple torches, and there the incomparable beauty and attractiveness of this plant is fully appreciated. It appears so healthy where the soil is deep, rich, and moist and under such conditions is so adaptable to naturalizing that one seeing it thus disporting luxuriantly in the wild would hardly surmise that it came from distant Australia.

About the home grounds, it should be used more particularly in groups and masses in the foreground of border shrubbery plantings, for its effect is most attractive at a distance. One should also know its need of a bountiful supply of water during the summer months to be successful in prolonging its flowering period.

Purple is a difficult color to harmonize with reds and deep blues but fortunately there is less need of variety with this flower, since it is of a satisfying color in itself. However, one may not fear its lack of harmony with the whites or yellows and even the light blues will appear quite pleasing with it. The plant is readily propagated by division of the roots.

The rose loosestrife, commonly listed as *Lythrum superbum roseum*, is a clearer, finer colored form than the species, more robust in growth and somewhat later in flowering.



Fig. 36. Purple loosestrife.

Mertensia virginica

VIRGINIA BLUEBELLS

The Virginia Bluebell is one of the native flowers that is very effective in the early spring garden and well adapted to naturalizing under trees and such areas too shaded for flowering plants after the trees come into leaf. But during the first two weeks of May they are most effective in flower, especially when arranged in rambling naturalized colonies as might be seen in the wild or when interplanted in the garden with daffodils and early varieties of narcissi.

The plant grows rapidly in early spring to a height of one to two feet with large, coarse, bright green leaves followed by the production of drooping clusters of flowers that have a purple tube and a blue bell. Unfortunately the leaves die down after flowering, leaving a vacant area unless interplanted with later growing plants. It enjoys a sheltered location with deep, moist, loamy soil, and should not be disturbed when once established.

This *Mertensia* may be readily propagated by seed if sown as soon as ripe, but propagation by division is uncertain.

Monarda didyma

OSWEGO BALM

This popular member of the mint family is one of the most brilliant of our native wild flowers. Doubtless its attractively colored and artistically formed flowers were discovered at an early date, since it has long been considered a treasured gem of gardens both here and abroad.

The Oswego balm or bee-balm is a most distinctive plant. It possesses a refreshing, pleasing aroma emanating from both foliage and flower. Nothing surpasses it in the richness and intensity of its color, while it adds to these attributes a form and grace of flower head that is most artistic and distinctive.

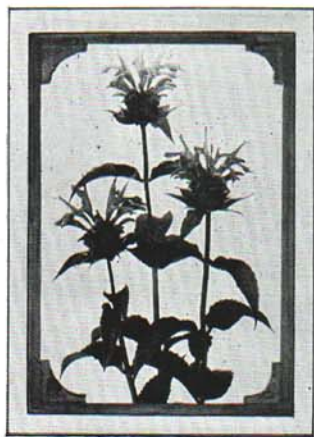


Fig. 37. Oswego balm.

Grown on the muck lands, like peppermint, it prefers soils that are both rich and moist, and its underground rootstocks spread rampantly, usurping all neighboring areas. From these spreading rootstocks are produced its numerous upright, square-stemmed shoots adorned at each node with a pair of opposite bright green leaves. Each succeeding pair of opposite leaves are at right angles to the preceding pair, making alternate pairs directly above one another. In early July, when these unbranched shoots have reached two feet or more in height, each is terminated by the production of a large head of tubular flowers held like a flaming crimson torch above its dense foliage. Masses of this free flowering perennial of such stimulating color produce most striking color effects in the garden.

At the flowering season, the plant requires an abundant supply of moisture to maintain its dense foliage and heavy flower production. When this demand is satisfied it remains in bloom for an extended period, due partly to its unusual habit of originating a new flower stem at the center of the first flower head, thus forming a second flower cluster above the first and often a third above the second. As a cut flower it is equally suitable, remaining fresh for several days if kept in fresh water.

Its moisture-loving character suggests the suitability of this perennial for naturalizing along the banks of flowing streams or placid ponds, while the vividness of its masses of stimulating colored flowers suggests its suitability for lighting up the more somber corners of woods, shrubbery and herbaceous plantings. Its flowers are quite inharmonious with those of the purple loosestrife and with most other purple, red or magenta flowers; but it makes most pleasing effects when combined with the double babysbreath, the white-flowering sneezewort, the light blue spike speedwell, or with masses of deep yellow coreopsis, or of light yellow camomile.

Its habit of spreading vigorously suggests propagation by division; spring plantings are generally more successful than fall plantings.

Papaver nudicaule

ICELAND POPPY

The dainty characters of this little perennial poppy, offspring of the Arctic regions, are in strong contrast to the hard and rugged conditions of its native habitat. There, almost to the bleak snow lines, this diminutive foliaged perennial closely hugs the sparse infertile soil that often barely covers the underlying rock. On these little tufted plants are borne frail, leafless, hairy stalks each terminating in a delicately crinkled flower so bright and gay in color as to cheer the most downcast spirit. In scarlet or orange, in yellow or white, no opium dream in the Flowery Kingdom was ever painted in more enchanting colors.

Like many other rock plants, this diminutive poppy thrives in an abundance of sunshine and in well drained soil. Given these conditions it thrives on the lighter and rather infertile soils. Grown in richer soils it tends to become a biennial, reseeding itself readily. The flowers appear about the second week in May and are abundant until the middle of June. Through the remainder of the growing season it flowers sparingly.

The Iceland poppy thrives in soil-filled crevices in rock gardens, walls, walks, steps and other wayward spots too infertile and sun-exposed for the welfare of most garden plants. It is propagated readily from seed. *Papaver alpinum*, known as the Alpine poppy, is a more diminutive form of the Iceland poppy that is even more fitting for the small rock garden.

Papaver orientalis

ORIENTAL POPPY

With all the pomp of barbaric splendor the great Oriental poppies flaunt their dazzling colors. The vivid orange-scarlet of their immense cup-shaped flowers, sometimes eight to nine inches in size, protruding like flaming torches above the luxuriant foliage, are so striking and insistent as to totally eclipse the other flowers. But in the foreground of a copse, a mass of evergreens or a border of shrubbery not in bloom,

how glorious the great poppies are! They need both distance and isolation to soften their flamboyant splendor.

Culturally, they are very hardy plants and thrive in any good garden soil and when once established are one of the most permanent features of the garden. They are difficult subjects, however, to transplant. August and September is the best time to handle them as after this period they resume active growth preparatory to the next seasons bloom.

After the flowering season, the foliage dies back to the ground, leaving bare unsightly spots un-



Fig. 38. Oriental poppy.

less other late growing plants are interplanted to occupy the spaces thus left bare. This poppy is readily propagated from seed planted in July or August. For spring planting, it is desirable to purchase plants grown in pots, that the roots may not be disturbed in the transfer to the new locations. Like other poppies, the flowers wilt directly after cutting. However, if the flowers are cut in early morning, at the stage of development when the buds are just about to open, the outer green calyx removed, and the flowers placed directly in water they will last a few days.

There are many choice varieties now available in colors varying from white to dark red, although the flaming orange-scarlet still remains the dominant color. Mrs. Perry and May Sadler are choice pink varieties, while Beauty of Levermere is a select dark red. Variety Mrs. Perry makes a pleasing combination with the yellow daylily and with the early white phlox, Miss Lingard.

Pentstemon

PENTSTEMON (BEARDTONGUE)

These flowers, largely native of the southwest and of Mexico, are a class of plants that has become so generally used in England as to constitute one of their most popular and desirable kinds for summer flowering effects. Unfortunately, in this harsher climate of Michigan, the winters are too severe and the summer atmosphere too dry for the welfare of most species, but there are a few kinds that are becoming more popular as they become known for summer effects.

The Pentstemons are tubular flowers that without simulate in form and growth the larger and more compactly arranged flowers of the snapdragons, but within the pistil of the former is bearded, hence the name "Beardtongue". There are numerous species of this genus varying much in size, color and season of flowering. Many of them, although natives of America, have been but little known and grown in this country. It has generally been considered that these plants are too tender for the climatic conditions of the northern states since the species most commonly cultivated as garden flowers were natives of southern sections. Within recent years the attractiveness of the hardier species and the development of superior strains of these species has opened a new field of culture for them in northern gardens.

One of the most common garden species is *P. barbatus*, while the variety *torreyi* is a choice selection of it. The flowers of this species are very slender in loose spikes of bright scarlet red color. It can generally be wintered by mulching and may be propagated by division, seed or cuttings. *P. gloxinioides sensation* is a much showier species with larger, broader flowers, forming larger trusses, and commonly in deeper, richer colors. It is not generally winter-hardy and should be handled as an annual, sowing the seed each year, early in the spring, in-doors. Its general attractiveness and succession of bloom from late June to October make it well worthy of this annual effort of propagation.

Pentstemon glaber is a handsome flowering species that has been too little known and grown as a flowering plant. It is upright growing to a height of one to two feet with very attractive spikes of rather large light blue flowers that sometimes vary to light purplish. It makes an excellent cut flower and is in bloom in early June. It is readily propagated from seed.

Pentstemon milaterus is one of the most admirable kinds of recent introduction. It is similar to *Pentstemon glaber* but is higher growing, longer stemmed and light pinkish lavender in color. Commonly it attains two feet or more in height and is a most desirable cut flower. Like most other pentstemons it is much benefited by winter mulching, and is readily propagated from seed.

Pentstemon hirsutus is the species commonly observed in flower along roadside banks and other dry, exposed, infertile situations in June. It is a loose-growing, slender, often sprawling plant, with dull purple flowers about an inch long arranged in loose, irregular panicles. Though this species is not so attractive as others its prevalence upon such exposed situations in Michigan demonstrates its thriftiness, hardiness and general adaptability to these climatic and soil conditions.

Paeonia

PEONY

P. officinalis. The old world peony, native of southern Europe, takes its name from Pacon, the mythical physician who with it cured Pluto of the wound given him by Hercules. Because Pacon used it with such magical results people believed, in olden times, that no evil spirit would come near it. This made it of all plants the most desirable near a dwelling. It became so popular and commonly used by the masses during the Elizabethan period, as to fall into disrepute with the aristocrats. It was, however, brought by the early Puritans to their new country and planted in every old-time door-yard. Even today, we treasure this peony of our forefathers for its large double flowers of brilliant crimson that appear about two weeks before the season of other peonies. Frequently, it is the only peony in flower for Memorial Day. There are varieties in colors ranging from crimson to white in both double and single forms.

P. alba flora. The modern peony is the aristocrat of the garden, having originated among the nobility of France. Its ancestors came originally from Siberia and northwestern China, but had long been cultivated in both China and Japan. About the middle of the last century,

the nobility of France became enthusiastic collectors of this wonderful new flower, importing to western Europe the best varieties attainable from these distant oriental countries at what seemed fabulous prices. Thus for many years in western Europe it was one of those rare flowers whose ownership and culture was confined to the nobility. Their earnest enthusiasm, contagious as the tulip craze of Holland, spread throughout their country. This intense interest in their culture soon led to efforts on the part of their skilled gardeners to develop newer and even grander sorts. Thus, under the intelligent caretaking hands of M. Jacques, gardener of King Louis Philippe, and others of this period, some of the first fine varieties of today were grown. This marked the beginning of the development and introduction of a



Fig. 39. The modern peony, variety Primevere.

procession of superior varieties that are exceeded in quality, variety and number by no other hardy perennial.

The single peonies, a distinctive group of the modern peonies, have one or two rows of large round guard petals, with distinct centers of large pollen-bearing stamens in some shade of yellow. They are good

as cut flowers and especially desirable for the perennial border on account of their brilliant colors and upright habit, not being beaten down by heavy storms as are many of the heavier flowered double varieties. Some consider them even more artistic and attractive than the double flowering forms.

Within recent years, a new race of peonies, intermediate between the single and double types, has been developed and introduced as Japanese peonies. Japan has sent to America many of the most attractive flowers of our collections, but none seems more distinctly Japanese in the exquisite daintiness of coloring and form than this very artistic class of peonies. Most of them have one or more layers of broad guard petals making a cup-like form about the mound of brilliantly colored petaloids comprising the center. It is this attractive center, developed by stamens transformed into filamental petaloids brilliantly colored and artistically arranged, that gives this oriental type such a distinctive appearance.

Though the Japanese peonies are not generally known and grown, to the peony enthusiast or to one desiring something uncommon, they offer a very worthy and desirable group for culture.



Fig. 40. Japanese peony, variety Ama-No-Sode.

Peonies grow best in a deep, rich, moderately moist loam. The soil bed should be dug deeply, and a great quantity of well rotted stable manure worked into it. Plants should be set in early fall as they begin new growth at that time. In the spring, which is their season of most rapid development, the new growth, started the previous fall, is continued. When the plants are set, the roots should be placed with not more than three inches of soil over the crown or eyes. After the soil freezes in the fall they may be covered with straw or stable manure to prevent winter heaving. When the soil thaws out in the spring, this winter covering may be removed from over the crowns and if manure has been used it should be dug into the soil about the roots.

Peonies are rather gross feeders, responding well to fertilizer that supplies organic matter as well as the required chemical elements. Well rotted stable manure meets these requirements. Fresh stable manure applied in the spring promotes the development of *botrytis* blight, a common fungus disease which attacks stems, buds and leaves. Early in the spring, the young stems are attacked at the base, the tissue turns black, and the stems wilt and fall over. Later, the young flower buds are attacked; they turn black and dry up. If the buds are more advanced in development before being attacked, they turn brown and fail to open. In very wet seasons, this trouble is most prevalent. The prompt removal of all affected plant tissue, keeping the plants moderately dry, especially over night, and otherwise improving the

sanitary conditions about the plants will prove most efficacious in its control.

In addition to the nutrient requirements, abundance of moisture is needed from the time the plants are in bud through the flowering period. Hence, the soil should be kept well tilled. To obtain extra fine blooms, especially with double flowering varieties, all lateral buds should be removed as soon as formed, leaving but one terminal bud on each long shoot. Two or three applications of liquid manure, beginning



Fig. 41. Single peony, variety L'Étincelante.

about ten days or two weeks before blooming, will produce larger and better flowers.

The flowers, if desired for the house, should be cut in early morning when well filled with moisture, and at the stage of development just before or as they are partly open. To conserve the vigor of young plants, the flower stems should not be cut below the first pair of leaves. The period of blooming for the herbaceous peonies ranges from late May through June. They are especially suitable for planting in front of shrubbery, along walks and in the general herbaceous border. Peonies are also desirable when arranged in masses for distant effects. Since they do fairly well in partial shade they may be used also to brighten the somber nooks.

Though peonies may be interplanted with almost any of the late flowering perennials, late flowering lilies make the best associates for them.

Many of the fine Chinese varieties of double peonies are too expensive for general planting. Some of the choice varieties in the popular price class are as follows:

Baroness Schroeder, late white.
Festiva Maxima, early white.
Adolphe Rousseau, deep velvety red.
Claire Dubois, satiny pink.
Mme. Emile Lemoine, white, midseason.
Reine Hortense, double hydrangea pink, midseason.
Monsieur Jules Elie, light pink, midseason
Karl Rosenfield, deep brilliant crimson, midseason.
Marie Crousse, salmon pink, midseason.
Sarah Bernhardt, dark pink, midseason to late.

Some of the choice varieties in the higher priced class include the following:

Alice Harding, white.
Le Cygne, white; given highest rating by American Peony Society.
Kelways' Glorious, white with rose blush.
Mme. Jules Dessert, flesh pink shading to straw color.
Mrs. A. M. Brand, white.
Mrs. Edward Harding, white.
Phillippee Rivoire, dark amaranth-red; fragrant.
President Wilson, rose pink, changing to shell pink.
Solange, waxy white, suffused with golden light.
Therese, satiny pink, fragrant.
Tourangelle, lilac rose, shading to salmon.
Walter Faxon, bright coral pink.

Phlox paniculata

GARDEN PHLOX

The garden phlox is one of our native flowers that was adopted at an early date to occupy a dominant place in the colonial garden. Since those pioneer days the size, colors and general attractiveness of the flowers have been so improved that it is today one of the most admirable, showy and popular of the summer flowering perennials. It would be difficult to obtain such gayety of bloom in the summer garden without the presence of groups or masses of these brightly colored flower heads lighting and dominating the scene. The large, terminal panicles of blooms, in various colors through the reds, purples and salmons to white, either in single or parti-colored flowers, rival in display the most showy of garden perennials.

To obtain such admirable effects it is necessary to select a sun exposed situation where the top soil is both deep and rich and where abundance of moisture may be supplied during the flowering season. Though phlox is a perfectly hardy plant of easiest culture and though it thrives for many years with little attention, it responds readily to good culture.

The plant grows in compact clumps which enlarge from year to year. If left undisturbed these tend to become root-bound and "run-out". To prevent this development, the old clumps should be dug up about every third or fourth year, and redivided. The vigorous, well rooted pieces about the outer portion of the rootstock should then be selected for re-planting. After the flowering period the old flower heads should always be removed to prevent the development of seed which if allowed to mature and drop will germinate readily. These seedlings generally revert to the small magenta colored flowers of the type and being young and vigorous commonly smother the parent plant. This is the reason that so many of the phlox seen about the home grounds are of the small flowering, magenta colored seedling type. The better varieties of phlox now available are much larger and finer in color.

Phlox is particularly desirable for mid-summer effects in formal or informal gardens, in the planting of herbaceous borders and in the foreground of shrubbery plantings. As a class, they are thrifty, hardy, cosmopolitan plants of neat, erect habit and profuse bloomers over a long period. Height, color, and time of blooming vary with the varieties. The best effects are gained by planting groups or masses of the same variety repeated sufficiently throughout the garden to characterize the entire scene. One or two other varieties of harmonious colors should be selected and more sparingly disposed, to develop a pleasing variety of color effect. Since phlox are rather late flowering plants they may sometimes be interplanted with earlier blooming perennials, such as many of the early flowering lilies and Oriental poppy, to grow and flower before the phlox requires the entire space. They are most readily propagated by division, and will not come true from seed.

The beauty of phlox is sometimes unfortunately spoiled by the defoliation of the plants in mid-season. During moist weather this trouble is commonly due to mildew, which may be controlled by keeping the foliage as dry as possible, and by dusting the foliage with sulphur or

spraying it with Bordeaux mixture. During hot dry weather, defoliation is more commonly due to red spider which may be controlled by syringing both the upper and lower surfaces of the leaves with a very fine, forceful mist of water.

Since phlox grows so readily from seed such a great number of horticultural varieties have been introduced as to bewilder one in a proper selection of them. However, the following is a partial list of some of the better varieties:

- Baron von Dedem, scarlet-red, large flowers.
- B. Comte, brilliant purple, tall growing.
- Commander, crimson red with darker eye.
- Count Zeppelin, white with red eye.
- Elizabeth Campbell, light salmon pink.
- Europe, snow-white with carmine-red band.
- Fuerbrand, brilliant orange scarlet.
- Georges Stroehlein, brilliant salmon, large and attractive.
- Lassburg, white, mid-season, tall growing.
- Miss Lingard (*P. Suffruticosa*), early white, with pale pink eye, fine foliage, long bloom, free from disease.
- Miss Verboom, a rose-pink form of Miss Lingard that flowers at the same time and that is free from any disease.
- Mrs. Jenkins, (Independence), pure white, early, good for massing.
- Mrs. Milly Van Hoboken, clear pink.
- Rijnstroom, deep rose-pink, tall growing.
- Thor, deep salmon-pink, shaded scarlet. Good grower.

Phlox subulata

MOSS PHLOX

The moss phlox, commonly known in the past as moss pink, is another old time favorite garden plant that is cherished as much for the effect of its refreshing evergreen foliage as for its masses of magenta pink flowers that appear in April and early May. It is a diminutive spreading plant two to six inches high, that thrives on dry infertile soils in exposed situations. Its stiff, linear leaves are crowded upon its procumbent stems forming dense mats of foliage that climb over adjacent rocks or cover other unclothed areas. Thus it is much prized as a ground cover where a fine textured foliage effect is desired and is very effective when used with the rockcress, golden-tuft, and such other sprightly flowers for early spring effect. There are many garden forms varying in the color of their flowers from white to light pink and to lavender, purple and blue. The plant may be readily propagated by cuttings or by division, and is particularly suitable for the rock garden.



Fig. 42. The moss phlox flowers in early spring.

Physostegia

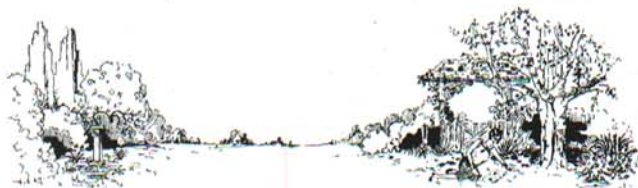
FALSE-DRAGONHEAD

The false-dragonhead is one of the native plants of North America that was adopted as a garden flower at an early period. Thereafter it was often commonly known as the obedient plant because of the interesting habit of the flowers normally arranged in vertical rows along each spike, remaining at any angle upon their stems at which they are turned. Being a native habitant of low lands it thrives most luxuriantly upon moist and fertile soils. Its heavily leaved stems are terminated in late summer with one or more dense spikes of tubular flowers, purple, rose or white in color.

The most common species, *Physostegia virginiana*, attains about three to four feet in height, but the taller growing form, var. *speciosa*, may reach from six to seven feet. The deep rose-colored flowers of this latter form are also more attractive than those of the old light-purple type. The white colored selection, var. *alba*, is also pleasing when sparingly used with the pink.

Recently a dwarf form, *P. v. grandiflora* has been developed, attaining about a foot to sixteen inches in height, bearing comparatively large compact spikes of deep rosy-pink flowers, that appear after the others have completed their display. This is one of the noteworthy introductions of recent years and doubtless will become a very popular plant when its admirable qualities become generally known. Var. *vivid* is a desirable selection of this type.

The *Physostegias* grow in the form of a compact clump that should be frequently divided. Generally they are propagated by this means. They make the most desirable effects when used in repeated masses in front of dark-leaved shrubs or dwarf evergreens or thus intermingled with other herbaceous plants for late summer and fall effects. Upon the farm or the estate they are also most suitable for naturalizing in moist situations where their masses of bright spikes may enlighten a favored vista. The deep rosy-pink selections are also very attractive cut flowers and all hold their bloom for an extended period. The dwarf form is very spreading in growth and makes a good late flowering perennial in the rock garden.



Platycodon grandiflorum

BALLOONFLOWER

The balloonflower, with its unique conspicuously inflated buds, appears after the middle of July to assume the burden, lately carried by the bellflowers, of furnishing the rich cool refreshing blue color of the garden. From this time well into August its profusion of widely opened deep blue, bell-shaped flowers, each two to three inches across, constitutes an admirable feature of the mid to late summer garden. It is so similar in color and form to the bellflowers that this oriental species is often known as the Chinese or Japanese bellflower.

The balloonflower requires a medium sandy loam, succeeding neither in a stiff clay nor a light sandy soil. Like the bellflowers, it seems particularly sensitive to poorly drained soils but thrives well with little care where soil conditions otherwise are favorable. Its white, carrot-like roots are very brittle, making it difficult to transplant established plants or to propagate successfully by division. This brittleness also characterizes the long upright flowering shoots which, if unstaked and allowed to fall, cannot be straightened without breaking. Possibly this brittleness explains why the tops should not be cut away in the autumn but should be allowed to die off naturally, as otherwise the crown may be injured. Well established plants are dense and bushy and attain a height of about three feet. The leaves, borne on upright shoots, are light green and sharply toothed. These many coarse upright shoots are close-branching near the top, and each of the numerous stems terminates in a bud producing the effect of a rather compact cluster of flower buds which fortunately do not open together. Thus, the flowering season is extended over a prolonged and continuous period with enough flowers successively blooming to carry an effective display.

When repeated groups or masses of these giant bellflowers are arranged in front of shrubbery or higher growing herbaceous plants they are very pleasing for late summer effects and combine harmoniously with most other colors except the purples. Though the balloonflowers are difficult to propagate by division they may be most readily multiplied by seed.



Fig. 43. Balloonflowers simulate in form and color the beauty of the bellflowers.

The white flowering variety of the balloonflower, listed as *P. grandiflorum alba*, is desirable for use sparingly with the blue.

The Japanese balloonflower is a strong growing bushy variety with flowers possessing ten petals instead of the usual five.

Rudbeckia laciniata

GOLDENGLOW

Goldenglow, so commonly grown about many home grounds, is a double flowering form of the cut-leaved coneflower. With little care and attention, this coarse, vigorous, high growing perennial spreads rampantly and in late July its glowing double flowers overtop its deeply lobed foliage. The very commonness of the plant has prejudiced some against it but how many wearied eyes have clung gratefully to its inspiring brightness as they have seen it thriving amid otherwise dreary and depressing surroundings. In more favorable developments, a vigorous mass of it, forming a dense background some eight to ten feet high in a distant corner of the garden, all aglow with golden flowers, is an admirable sight.

For best effects, goldenglow should be transplanted every third or fourth year lest its spreading habit makes it too dense and also encroach upon the areas of neighboring plants. Often, it may be interplanted between shrubs for late summer effect, and sometimes it may be naturalized in a distant corner where its golden flowers may brighten the summer dullness.

The plant is propagated readily by division, and grows in any well drained soil of moderate fertility, in full sunlight or partial shade. Like other coneflowers, however, it flourishes much better when abundantly supplied with moisture and fertility.

Rudbeckia speciosa

SHOWY CONEFLOWER

The blossoms of the showy coneflower strongly resemble those of both the brown-eyed Susan and the black-eyed Susan. This species, however, is the general choice for garden culture, being larger growing and more attractive in flower. It is the only perennial species of the group and also, unlike the others, it does not prove pestiferous from spreading by seeds.

The plant is compact in growth, with masses of deep golden, yellow-rayed flowers three to four inches across with a cone shaped central disc of velvety maroon. The plant is usually two to three feet high; its leaves are long, rather narrow and mostly at the base of the plant. It thrives in any moderately rich, well drained garden soil, in full sunlight or partial shade, and is considered the best yellow daisy-like flower for the garden, flowering in August. This showy coneflower is most suitable for planting in the herbaceous border in front of larkspurs or other higher growing and earlier flowering plants. It is commonly propagated by division.

R. hirta, the black-eyed Susan, will thrive in the driest, hottest situation where many others would fail. It is a biennial that reseeds readily

and is a very common weed in the fields. It flowers in July and should be selected only where the soil is not sufficiently fertile for the showy coneflower.

R. triloba, the brown-eyed Susan, is another biennial form, native in Michigan, that is perpetuated by self-sown seed. It develops a bright, clean foliage and attractive flowers but, unlike the black-eyed Susan, prefers a moist soil. Like the preceding species, it may be readily naturalized but it flowers late in July and in August.

Saponaria ocymoides

ROCK SOAPWORT

Soapworts were doubtless valued in olden times for the quality of their mucilaginous juices, forming lather in water, since the botanical name of this plant is derived from the Latin word *sapo*, meaning soap. Now, when soap is otherwise derived, this species is interesting for its characters as a rock garden plant. Of the many ground-clinging, mat-forming, fine textured perennials now available, this European immigrant is one of the leading and most desirable.

While the dependable early spring-flowering trio, rock arabis, golden alyssum and moss pink, are still at the height of their display, the bright, dainty flowers of this spreading perennial appear above its dense foliage, becoming so numerous as to form sheets of lively pink in the May garden. In addition to its prodigious flower display and its attractive color, it has the quality of blooming over a more extended period than any of its predecessors. The foliage is also so tidy, compact and deep green that even after flowering it forms an attractive ground cover. The plant attains about nine inches in height and is propagated readily from seed or cuttings. Withal, it is the most desirable rock garden plant of its type for bright pink flowers in season from mid-May to Mid-June.

It combines with either the snow-in-summer or the hardy candy-tuft, both flowering about this season, to make a pretty color harmony in pink and white.

Sedums

STONECROPS

The stonecrops are most suitable for dry, infertile soils and for clothing other areas too sun-exposed and arid for most garden perennials. How admirable these diminutive low-lying plants appear clinging closely to the shallow, infertile soil partly covering underlying masses of out-cropping rocks. Kindly associations have been brought to mind when they have been seen carpeting some long forgotten and neglected burial spot, composing the last vestige of that sweet, sympathetic, unforgotten love of some lonely soul for the departed. Now, however, the intense enthusiasm for rock gardens makes the adaptable qualities of these ground-covering perennials more popular for planting the numerous shallow soil filled crevices and rock-strewn areas that characterize such developments.

As a class the stonecrops are sun-loving plants that prefer sandy soils and that are particularly susceptible to poor drainage in winter. Any of them may be readily propagated by division or cuttings while colonies of some of the finer leaved kinds may be established by simply cutting the tops into small pieces and strewing them over the soil, covering lightly with sandy soil and keeping them uniformly moist until rooted.

There are several species and varieties of stonecrop for garden planting, but goldmoss, *Sedum acre*, is the most common in cultivation. It is a low spreading perennial with minute light green leaves densely clothing its numerous small upright stems that reach about two inches in height. From mid-June to mid-July this attractive fine textured foliage is almost covered with a multiplicity of golden yellow flowers



Fig. 44. The showy stonecrop is a beautiful late summer flowering perennial.

from which it gains its common name goldmoss. It may be readily identified from other species by the acrid taste of the leaves. This diminutive stonecrop is most suitable for plantings in crevices of stone walks, steps and walls, as well as for carpeting rockeries.

Of the many other stonecrops adapted to rock garden plantings, the Siebold stonecrop, *Sedum sieboldi*, is a choice species. It is a low plant but six to eight inches high with stems clothed with flat, rounded, pink-edged, bluish-green leaves arranged about the stems in whorls of three. In September, these stems are terminated with branched but rather compact clusters of pink flowers. The foliage also turns pinkish in autumn. It is one of the best of the stonecrops for rock gardens.

The white stonecrop, *Sedum album*, and the orange stonecrop, *Sedum kantschaticum*, are other particularly worthy sorts for the rock garden.

The showy stonecrop, *Sedum spectabile*, is a large, flat-leaved, high growing species and is the best for the herbaceous garden. It is like-

wise distinctive in that, unlike the other stonecrops, it thrives best in stiff clay although it demands neither the soil fertility nor moisture necessary for most garden perennials. It is an upright, compact plant attaining one and a half to two feet with rather large, thick, plain, grayish-green leaves. About the middle of August each of its stout upright, heavy-leaved stems terminates in a large flat compact cluster of small flowers, usually of light lavender. The admirable effect of the plant at this floral season proves the appropriateness of its common name.

The showy stonecrop is useful for developing late summer effects in dry infertile soils; it accentuates primary points in the formal garden, and it develops tidy effects about corners and other places where compactness of growth and firmness of effect are necessary. It may be propagated by cuttings of stems or leaves, as well as by division.

Var. brilliant is a deep rosy-crimson flowering selection of the type.

Thalictrum

MEADOWRUE

It seems to be the mission of some plants to compose the more subtle, ethereal, but less striking effects of a garden. It is such as these that often endow it with a peculiar charm not readily analyzed but generally felt. They ameliorate and enhance the landscape, soften the angles, bestow grace and the sense of mystery where otherwise there would be sharp contrast and harsh outlines.

The *Thalictrums* are a genus of some magnitude but only a small number are in general cultivation. Some are native of Michigan and of other northern sections of the United States, while others are native of northern Europe and Asia. Among them are to be found species suited to the cultivated border, to the rock garden, the waterside and the wild garden.

The foliage of the Meadowrues is one of their most attractive qualities. In some species its beauty is of even greater value than the flowers. There are few perennials so generously endowed with such lovely greenery that remains so attractive throughout the season.

The most frequently planted species of Meadowrue in Michigan is *T. aquilegifolium* and its various selections. This species flowers in June after attaining about three to four feet in height. The young plant, as it first makes its appearance in the spring might readily be mistaken for a columbine, so closely



Fig. 45. Meadowrues are attractive garden plants both in foliage and flower.

does its many small rounded leaflets simulate this better known flower. The type form has greenish-yellow flowers, but this is not often seen in gardens, nor would it prove quite so attractive as the rose (var. *roseum*), purple (var. *purpureum*) or white (var. *album*) colored varieties. The feathery flower heads of these selections thrust above their delicate foliage compose the fascinating beauty that typifies their effects during the flowering period.

Thalictrum depterocarpum is another very handsome species with rosy-purple flowers that bloom in late summer. It attains a height of about four or five feet and is the only species that holds its petals during the flowering period. Others drop their petals directly after the flowers open, the stamens composing the main effect of the flower heads. Unlike most other species, also, it is not quite as hardy and therefore should be mulched over winter.

Thalictrum glaucum is one of the most pleasing of the yellow flowering species. Its foliage is perhaps the most beautiful in the family, and it grows to a height of four to five feet with the characteristic airy grace of all the meadowrues, but the stems are strong enough to uphold their burden of pale yellow mist-like flower heads, without staking. It constitutes an excellent companion for the Delphiniums.

Thalictrum minus adiantifolium, known as the maidenhair meadowrue, is a smaller growing form but one foot in height, with very fine textured foliage resembling that of the Maidenhair fern. Its flowers are in drooping loose panicles, light yellow, slightly tinged with green. Its dainty foliage is its chief attribute. This attractive plant is most suitable for small gardens in shaded or partly shaded situations.

Meadowrues thrive under conditions of partial shade and where the soil is deep and moist. They are winter-hardy and troubled by few insects or diseases. Usually this kind of a perennial is propagated by the division of its roots in early spring, although it may likewise be propagated by seed.



Trollius asiaticus

SIBERIAN GLOBEFLOWER

This orange-colored globeflower derives its common name from the distinctive globular form of its large buttercup-like flowers. The early appearance of these attractively formed and glowingly colored flowers, lending their warmth and brightness to the garden in May, makes the globeflower an admirable and worth while plant in the perennial garden.

Unlike most garden plants, which require a warm, well drained soil for their best development, this plant delights in a deep, cool, moist soil and in partial shade. It grows in a clump, with many strong five-lobed, deeply cut, glossy, dark green leaves growing mostly from the base of the plant. The flowers of this particular species are larger and more double than many of the others, each flower bearing from fifteen to twenty petals.

Globeflowers may be propagated from seed if it is sown directly after ripening. They may also be multiplied readily by division. The several varieties vary more particularly in the color of their flowers, which range from lemon-yellow through orange to orange-red. The European globeflower and its numerous varieties are more generally planted than the Siberian species. The latter, however, is considered the most vigorous, the hardiest, and the best orange-colored flowering perennial for the May garden.



Fig. 46. Globeflowers are the best orange-colored flowering perennials for the May garden.

Tunica saxifraga

SAXIFRAGE TUNICFLOWER

Most of the hardy perennials appeal to our sense of beauty through the attractiveness of their flower displays; others by the colors of their foliage or by their artistically formed and colored fruits, but this very diminutive mat-forming plant, attaining but six to ten inches in height, makes its simple appeal by the very daintiness of its numerous fine, wiry, deep-green stems, scantily clothed with minute leaves.

In late June and July, when each of these rigid, thread-like stems terminates in a small, pale, rosy-white flower the ethereal cloud-like effect produced seems in perfect unity with the delicate, fine textured effect of the stems and foliage. This daintiness and freshness of appearance prevails throughout the year. In addition to the general attractiveness of this plant, "whose mild gleam of beauty never ceases to enrich the common light,"* it appeals to the gardener because of its suitability for setting in the crevices of stone walks, walls, and other rock-strewn areas where the soil is meagre and infertile. The plant thrives in full sunlight, and seeds dropping from the matured flower heads germinate readily wherever they alight upon the surface of a soil-filled crevice. It may also be propagated by division.

*Wordsworth.

Veronica

SPEEDWELL

As the spires of numerous cathedrals, reaching heavenward, commemorate and perpetuate the spirit of Christ, so these spiry flowers commemorate and perpetuate the name and spiritual grace of that humble woman, Saint Veronica. It was Saint Veronica who wiped the brow of Jesus as he ascended Mount Calvary with the cross. The impress of his face is said to have been left upon her towel and since the flowers of some species of speedwell seem to resemble a face, this plant has been named thus to commemorate the benevolent spirit of this saintly woman.

There are numerous species of *Veronica* varying much in size, in habit of growth, and in adaptability to garden developments. Many species are rock garden plants; one species at least is a lawn pest; others are especially desirable garden plants, valued for the multiplicity of their blue flowers generally produced in the form of compact spikes.

The clump speedwell, *Veronica longifolia*, var. *subsessilis*, is one of the best deep blue flowers of the garden, blooming from early to late August. The plant is much branched and vigorous, with deep green heavy leaves some two to four inches long, with the characteristic narrow-pointed form and saw-toothed edge of the genus. In early August when the growth has attained two feet or more in height, its six to twelve inch pointed flowering spikes rise above its dense rich foliage and burst into bloom. It is the largest and most showy of any of the speedwells for planting in this part of the country and is one of the most admirable summer flowering perennials for the herbaceous garden. This species is hardy and is easily grown, flourishing best in a good rich garden soil and in full sun. Unlike most of the other speedwells, it cannot be propagated from seed but may be multiplied by division or by cuttings.

This species is not as upright and compact as the spike speedwell and in a wind-swept situation requires staking.

The spike speedwell, *Veronica spicata*, is characterized by its multiplicity of small vertical spikes of bright blue flowers that surmount its dense upright unbranched shoots in late June and July. It is one of the most easily grown perennials of the garden, being propagated readily from seed and thriving in any good garden soil with little care. The plant attains a height of about two feet and the flowers, opening first on the base of the spike when it has attained two or three inches in length, bloom successively until the spike has reached a length, of eight to twelve inches. Thus its



Fig. 47. Clump speedwell is one of the best deep blue flowers of the garden.

flowers are displayed over a prolonged period. In addition to their effectiveness as garden plants, the flowers, because of their striking form and dainty color, are excellent in mixed bouquets. There are varieties of this species in white and in pink.

The woolly speedwell, *Veronica incana*, is a rather dwarf species with conspicuously downy, gray-green low-lying leaves in tidy clumps. About the latter part of June, its branching flower shoots, clothed with hoary leaves, reach from 12 to 18 inches in height. The graceful slender flowering spikes, some three to six inches long, terminating these shoots, are rich blue and very attractive. This species, being decorative in both foliage and flower, is admirable for the rock garden and is very useful as a foreground plant in the herbaceous border. It is hardy and thrifty in any good, well drained garden soil. It is propagated by division of the clumps or by seed.

Other species, some more diminutive in size, are adaptable and desirable for special conditions. The comb speedwell, *Veronica pectinata*, a mat-forming, ground clinging type, bearing a profusion of bright blue spikes four to eight inches long in late May and June, is an attractive rock garden plant. The rock speedwell, a variety of *Veronica teucrium* which is commonly listed as *Veronica rupestris*, is a larger, less spreading, more upright form that is also an adaptable much used rock garden plant, flowering in late May and June.



Fig. 48. Spike speedwell is characterized by its multiplicity of small vertical spikes of bright blue flowers.



Viola cornuta

TUFTED PANSY

Among the innumerable available species of violets, none is more generally satisfactory for the garden than this alien representative from Spain and the Pyrenees. It is apparently so intermediate in flower and foliage between the violet and the annual pansy that it is variously known as the tufted pansy and the horned violet. In recent years, the desirable developments of this species have tended toward the production of varieties with flowers quite comparable to that of the pansy.



Fig. 49. *Viola cornuta* is one of the best of the low growing perennials for the garden.

With such attractive flowers on perennial plants whose succession of bloom begins in late April or early May and continues throughout the season, few low growing perennials are quite so satisfactory.

As a rule violets thrive in a moist, cool, partly shaded situation, but some of the newer varieties of tufted pansies grow in full sunlight. For continuity of bloom, the plants should be sheared several times during the season, so that the flowers do not go to seed.

This is one of the best flowering edging plants for the herbaceous border and is also much used in the rock garden though it requires a deeper, richer soil than is ordinarily present there. It can be propagated by seeds, but the selected varieties are often multiplied by cuttings or division.

Jersey gem is one of the choicest varieties of violet color and is particularly noted for its profusion and continuity of bloom, its hardiness and adaptability to full sun.

G. Wermig produces large blue flowers and is exceeded only by Jersey gem in general desirability. Other varieties are available with flowers of white, yellow, or other colors.



Perennials for General Use

Aster
 Chrysanthemum
 Columbine
 Coreopsis
 Grass pink
 Iris
 Larkspur
 Peony
 Phlox
 Shasta daisy
 Sweet-william

Perennials for Cut Flowers

Babysbreath
 Balloonflower
 Bellflower
 Cattail gayfeather
 Chrysanthemum
 Columbine
 Coneflower
 Coralbells
 Coreopsis
 Gaillardia
 Globeflower
 Grass pink
 Iris
 Japanese anemone
 Lily
 Lily-of-the-valley
 Oregon fleabane
 Oswego balm
 Painted lady



Fig. 50. The Siberian iris.

Peony
 Purple loosestrife
 Shasta daisy
 Sneezewort
 Speedwell
 Violet boltonia

Perennials for Sandy Soils

Black-eyed Susan
 Blue wild-indigo
 Camomile
 Cattail gayfeather
 Coreopsis
 Gaillardia
 Goldentuft
 Iceland poppy
 Moss phlox

Red yarrow
 Rockcress
 Rose campion
 Sneezewort
 Snow-in-summer
 Soapwort
 Stonecrop
 Tunicflower
 Washington lupine

Perennials for Shady Locations

Coralbells
 Daylily
 Evergreen candytuft
 Globeflower

Lily-of-the-valley
 Monkshood
 Plantainlily
 Tufted pansy

Perennials for the Rock Garden

Carpathian bellflower
 Columbine
 Comb speedwell
 Common aubrietia
 Coralbella
 Evergreen candytuft
 Globeflower
 Goldentuft
 Grass pink
 Harebell
 Iceland poppy
 Iris pumila
 Maiden pink
 Moss phlox
 Rockcress
 Rock soapwort
 Rock speedwell
 Snow-in-summer
 Stonecrop
 Tunicflower
 Tufted pansy
 Woolly speedwell



Fig. 51. Maiden pink.

Perennials for April Bloom

Common aubrietia
 Evergreen candytuft
 Goldentuft

Iris pumila
 Moss phlox
 Rockcress

Perennials for May Bloom

Columbine
 Common aubrietia
 Evergreen candytuft
 Globeflower
 Goldentuft
 Grass pink
 Iceland poppy
 Iris

Moss phlox
 Oriental poppy
 Painted lady
 Rockcress
 Snow-in-summer
 Sweet-william
 Washington lupine

Perennials for June Bloom

Blue wild-indigo
 Canterbury-bells
 Common perennial gaillardia
 Coralbella
 Foxglove
 Grass pink
 Iris
 Larkspur

Lemon daylily
 Lily-of-the-valley
 Liliun elegans
 Peonies
 Red yarrow
 Sweet-william
 Sneezewort
 Washington lupine

Perennials for July Bloom

Fig. 52. Evergreen candytuft is a desirable spring flowering plant for the rock garden.

Aconite
 Babysbreath
 Camomile
 Canterbury-bells
 Carpathian bluebell
 Coreopsis
 Foxglove
 Heliopsis
 Hollyhock
 Japanese iris
 Larkspur
 Maltese cross
 Madonna lily
 Oregon fleabane
 Oswego balm
 Peachleaf bellflower
 Phlox (var. Miss Lingard)
 Purple loosestrife
 Royal lily
 Rose campion
 Shasta daisy
 Spike speedwell

Perennials for August Bloom

Balloonflower
 Cattail gayfeather
 Chrysanthemum
 Coneflower
 Clump speedwell
 Early anemone
 Garden phlox

Heliopsis
 Plantainlily
 Rose campion
 Showy stonecrop
 Tiger lily
 Violet boltonia

Perennials for September Bloom

Asters
 Chrysanthemum
 Coneflower
 Early anemone
 Japanese anemone

Monkshood
 Showy lily
 Showy stonecrop
 Siebold stonecrop
 Willow-leaved sunflower



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"STRENGTH MAY WIELD THE
PONDEROUS SPADE,
MAY TURN THE CLOD AND WHEEL
THE COMPOST HOME;
BUT ELEGANCE, CHIEF GRACE
THE GARDEN SHOWS,
AND MOST ATTRACTIVE, IS THE
FAIR RESULT OF
THOUGHT, THE CREATURE OF A
POLISHED MIND."

COWPER

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