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THOMAS MEEHAN & SONS,
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DELPHINIUM BICOLOR, Nuttall.—Pubescent; petioles somewhat dilated at the base; leaves digitately five-parted; lobes three to five cleft; divisions linear, short, rather acute; racemes lax, few-flowered, the pedicels elongated and spreading; spur rather slender, as long as the sepals; lower pedicels broadly obovate, entire, sparingly bearded. (Torrey & Gray's *Flora of North America*.)

The whole family of Larkspur is a particularly interesting one,—whether considered in its scholastic history, or in its purely botanical features. The botanical name is extremely old, *delphinion* being used by Dioscorides, an old Greek writer before the time of Christ, and who tells us it was so named "because the slender segments of the leaves resemble dolphins,"—the name signifying a dolphin in the Greek language. Sibthorp, in his *Flora Græca*, refers the *delphinion* of this early writer to two distinct species; but authors of our day do not agree with him as to why the plant was so called. The modern interpretation is that the unopened bud, with the tapering spur or nectary, is like the popular idea of a dolphin. The close student of history will, however, find many of these contradictory explanations of matters connected with plants, and the fact will afford an additional inducement to go over and study anew the reasons given for things. As an illustration of how errors may creep in, it will not be out of place to note here that one species of larkspur is known among the country people of England as "Stave's Acre," and anyone with no light but the name itself would be very likely to associate the plant in some way with an acre of land,—but when he afterwards learns that there is a species with the Latin name of *Delphinium Staphis-agria*, he gives a reasonable guess at the origin of the name. In like manner as regards its English appellation, larkspur, there is much difference of opinion. The accepted explanation is that it is from the resemblance of the "dolphin-like tail" of the flower to the "spur of a lark,"—but the critical examiner may be pardoned for wondering why this particular bird's "spur" should have been selected for comparison when there is nothing very remarkable to distinguish it from the "spur" of any other bird. The Italians call the plant *Sperone di cavaliere*, or knight's-spur, which might refer to the seed vessels, or even the jagged outline of some of the leaves, with more force than to the floral spur. Even granting the "lark" in the case, the French *pied d'alouette*, which is among the oldest of common names, would refer to that bird's foot instead of to its "spur,"—and, indeed, a French writer tells us that "It owes its name to the singular form of its seed vessels, on which may be distinguished not only the claws, but the joints of a bird's foot." We are glad to have this opportunity of exercising the student a little on this subject of accuracy. It is too much the custom to take these historic points "just as we find them," and of secondary importance,—but if they are worth anything at all, they are worth getting as accurately as it is possible.

Linnæus thought that this plant should be regarded as the true hyacinth of the ancients, of which a pretty account has been given in the twelfth book of Ovid's Metamorphosis; but there is also another old story of the creation of Delphinium, which is not as often told as that about Ajax. It is said that a poor fisherman falling in the sea was rescued by a kind-hearted dolphin, which carried him on its back to the shore. Some time afterwards, other fishermen set their hooks to catch this dolphin, but gratitude in the heart of the rescued fisherman caused him to thwart the designs of his fellows,—but he was detected and the exasperated crew drowned him therefor. The dolphin found his body, took it to Neptune, and urged on him to ask of Flora

the favor of turning the body into a flower, which she did, and *Delphinium* is the result.

In tracing the authority for names in modern botany, it is not customary to go much beyond the time of Linnæus or his contemporaries, and thus Tournefort is usually credited with the name in modern botanical works; but it was in use in connection with an European species by Clusius, who published a "History of Plants" in 1601.

The genus *Delphinium* is widely distributed, having representatives all over Europe, Northern Asia, and North America. Our pretty species, *Delphinium bicolor*, the Two-colored Larkspur, has been unfortunate in being confused with a Pacific species, *D. Menziesii*, and under this name it occurs in almost all collections made of late years in the Rocky Mountains. In his "Bibliographical Index," published in 1878, Mr. Sereno Watson shows that it is really the *Delphinium bicolor* which was found by Captain N. B. Wyeth on his commercial expedition across the continent in 1834, and was described subsequently by his fellow-traveler, Nuttall, in the "Journal of the Academy of Natural Sciences." How distinct it is from the *D. Menziesii* of the Pacific Coast may be seen by comparing with ours a plate of that by Lindley, in the "Botanical Register," No. 1192. In the true *D. Menziesii*, the spur is short and straight, while that of ours is narrow, slender, and curved downwards at the end. The specific name, *bicolor*, is from one of the petals being nearly white; but this character varies in Rocky Mountain plants. It is one of the most beautiful wild flowers of the Rocky Mountains, usually found growing where good soil has collected by long washing from the mountain sides, and dwarf shrubs and other coarse herbage afford it some little shade. The writer never found it in great quantity in any one place, so as to give any special character of its own to the natural scenery; but its chief mission in the great picture seemed to be to lend a charm to other things. Dr. C. C. Parry, however, who was connected with the expedition of Captain Jones, in 1873, speaks of it in his summary of the "Report of the Botany of Western Wyoming," as being abundant on the Green River, and as forming one of the features of the vegetation of that region calling for special remark. In this report, as in most others of that time relating to the Rocky Mountain region, it will be found referred to as *D. Menziesii*, as already stated.

Very few of the Rocky Mountain flowers adapt themselves to garden culture in the Eastern States. A good root of this plant, brought from South Park, Colorado, in 1873, did not flower till 1878, and from that the drawing for our plate was made. In more northern regions, the cultivator would probably be more successful.

A great deal of botanical interest offers itself to the student in the study of irregular flowers in the economy of plant life,—and especially as to the office of the spur in cases like this. We have not room in this chapter more than to suggest to the student that modern specnlations connect this spur with cross-fertilization,—the sweet secretions it may contain being thought to be designed to attract insects that should bring foreign pollen at the same time. But it is worth remarking, in connection with this subject, that, as in so many ranunculaceous plants, Delphiniums have the power of increasing their normal number of petals,—or, as florists say, they come "double," in which case they invariably lose the spur, and in this condition are visited by insects as freely as before.

Additional interest lies in comparisons between the spurs of the *Delphinium* and two other genera of *Ranunculaceæ*, *i. e.*, *Aquilegia* and *Aconitum*, the only other prominent native spurred flowers in this order. In *Aquilegia* flowers all the petals have slender spurs—some long and almost straight, as in the beautiful Rocky Mountain Columbine, *A. cærulea;* others are very short and hooked. One sepal only of the *Delphinium* is spurred, and this is rather short, wide-necked and of more or less curved outline. The *Aconitum* has one sepal spurred—or hooded—and two petals. The latter are small, slender, hooked and covered by the curious hood from which the common term Monk's-hood is derived. These irregularly-formed petals and sepals may frequently mislead the amateur botanist by their general appearance, as the plan of ranunculaceous flowers generally is simple and better adapted for quick analysis.

EXPLANATION OF THE PLATE:—1. Lower portion with the root of a rather undersized plant. 2. Upper portion of the flower-stalk.

Prepared by THOMAS MEEHAN.

WILD FLOWERS AND NATURE.

IN SILENCE.

The spider weaves its graceful web,
  And silently the mosses bright,
With beauty clothe the fallen tree,
  Lest its decay offend our sight.

All things in nature thus aspire,
  The charm of beauty to unfold;
I now am but a fallen tree,
  Like mosses bright, oh, manifold,
May God's own grace encompass me.

San Diego, Cal. MRS. E. E. ORCUTT.

A RARE FLORIDA ORCHID,—DENDROPHYLAX LINDENI.—The *Dendrophylax* is a genus of epiphytal orchids, of which only two species are well known. These are natives of the West Indian Islands. Mr. W. C. Steele, of Switzerland, Florida, says that a third species is found in that State, *Dendrophylax Lindeni*. As there are only about half a dozen tree-loving orchids in Florida, visitors will have something rare and interesting to look for. Mr. Steele thus describes it: "This is a veritable curiosity from the fact that the plant has no leaves. The fleshy roots grow up from a common centre and creep over the bark in all directions. From the centre arises the flower stalk, which bears one or two very curiously shaped white flowers, from one to two inches in diameter."

BOTANICAL STUDIES SIMPLIFIED.—Prof. Asa Gray's preface to his revised edition of "Gray's Lessons and Manual" gives the following advice to the student, which is somewhat remarkable, yet true in a certain sense: "No effort should be made to commit technical terms to memory. Any term used in describing a plant or explaining its structure can be looked up when it is wanted, and that should suffice. On the other hand, plans of structure, types, adaptations, and modifications, once understood, are not readily forgotten; and they give meaning and interest to the technical terms used in explaining them."

It should not be inferred from this that Prof. Gray did not recognize the value of perfect familiarity with technical names, but rather a mastery of them would come naturally with advancing work in another direction,—that the other knowledge gained would make much analysis and technical terms largely unnecessary.

For example, there are certain characteristics, confined to certain classes or orders of plants, familiarity with which may lead very close to identification without necessitating a long analysis through numerous divisions and subdivisions. This prominent character may be in the form of flower, the seed, or the leaves. Whatever it may be, one is brought to the point of determination quickly, and frequently in a more interesting way.

PRINOS VERTICILLATA, YELLOW-BERRIED.—I have just read an interesting article in MEEHANS' MONTHLY, of Nov., 1901, on *Ilex* (*Prinos*) *verticillata*. There is one interesting fact about the plant which you do not mention, viz., that a yellow-berried form is occasionally to be found.

I had the good fortune to discover, two years ago, a small clump of *Ilex verticillata* laden with golden-yellow fruit instead of the normal scarlet kind. An account of the same was published in *Rhodora*, of Dec., 1900.

But a few miles distant from this plant I found a good-sized tree of *Ilex opaca*, bearing a fine crop of similar clear yellow berries. Mention of this last was made in *Rhodora*, of March, 1901. Specimens of both kinds were sent to Gray Herbarium, Cambridge.

New Bedford, Mass. E. WILLIAMS HERVEY.

[The fact that occasional yellow-berried specimens might be found was recorded in MEEHANS' MONTHLY for Dec., 1898. Mention should have been made of it in the recent chapter.—Ed.]

TEXAS STATE FLOWER, — LUPINUS SUBCARNOSUS.—By recent resolution of the State Legislature, Texas now has a State flower. This effect had its initial impulse in the action

of the women's clubs, who demanded the Bluebonnet, or Buffalo Clover, as the State flower. This flower, improperly called Buffalo Clover, is no clover at all, but belongs to the leguminous family, the rightful name of this species being *Lupinus Texensis*. There are many varieties of the lupin growing wild all over America, and usually occupying the finest sandy soils. Some kinds are perennial, and others annuals. Some have flowers of yellow, pink, white and purple, but the prevailing color is blue. As the lupin will grow on almost any sandy spot, the seeds are gathered and sown on sandy barrens near the sea-coast, to be plowed under for manure, with the most satisfactory results.

TEXAS STATE FLOWER--FLOWERS BLUE.

Just why this modest, unpretentious little *Lupinus Texensis* has been chosen as State flower in this great ocean of brilliant flowers, can not be said, unless it is its beautiful blue, which almost covers our prairies in the early spring, filling the air with a most delicious fragrance.

The flora of Texas is, indeed, rich and varied,—it is simply grand. To gaze upon the prairies in the spring it is almost impossible to realize it is not a delightful dream. There are great stretches of pale-blue Lavender; dainty pink Oxalis; delicate white Candytuft; beautiful purple and white Pentstemon; dainty, clinging Lentil; short-leaved Skull-cap, with its blue and white flowers; the great yellow Evening Primrose, and silvery white Prickly Poppy. The Wild Onion is also a pretty sight, with its flowers of white, dainty pink and deep red; also red, yellow and pink Gaillardias; golden-yellow Coreopsis; beautiful white Erigeron; blue and yellow flax; Phlox in every shade of red, white and purple. Later there are the

scarlet plumes of Standing Cypress; blue, red and white Abutilons; pink, blue, white and purple larkspur; purple and white Verbena, and thousands of others too numerous to mention, for Texas is the native home of many of the carefully cultivated flowers of other States.

Fort Worth, Texas. ELLIE STELLE.

[The illustration on opposite page, with the flowers colored a most beautiful shade of blue, as shown by Miss Stelle's original painting, will appeal to the imagination of our readers as likely worthy of the honor bestowed—considering beauty alone.

There has been considerable inquiry as to what is meant by Buffalo Clover, and only a few days before this interesting communication reached us, a note from Mr. Geo. Wolfe Holstein, of Wolfe City, informed us that it was the *Lupinus sub-carnosus*.

We have not taken any liberty with Miss Stelle's manuscript; but it is well to note that *Lupinus sub-carnosus* is the name adopted by botanists. Under this name it is figured and described by Hooker in plate 3467 of his "Botanical Magazine"; but in plate 3492 he figures it again under the name of *L. Texensis*, not noting that it was the same as the one he had already named. The Texan Blue-bonnet is a dwarf perennial, and the Legislature might have done worse in their selection of a State flower.]

SEED DISSEMINATION OF WITCH-HAZEL.—Your excellent plate of Witch-hazel recalls my first acquaintance with it. A friend who was visiting us found it and brought some of the branches containing fruit to the house, and hung them up in the sitting-room as a curiosity. This was in August, two months or more before the fruit is scattered by Nature. The next day I was startled by a snapping noise, which it was puzzling to account for. Finally, a seed thrown entirely across a 16-foot room revealed its source, and investigation showed that others had been thrown nearly or quite as far, though not all reached its utmost bounds. The dry air of the house had prematurely expanded the capsules. The experiments of the late William Hamilton Gibson are interesting: "My experiments with the pods upon a long piazza and elsewhere proved that the momentum of the seed would commonly carry it to a distance of twenty feet, often over thirty feet, and in one or two instances the diminutive, double-barreled howitzers succeeded in propelling their missiles to a distance of forty-five feet by actual measurement." BESSIE L. PUTNAM.

DEVELOPMENT OF SEEDS OF PLANTS AND FISH EGGS.—It is quite an interesting fact that the plan of development of plants and fish from the egg is practically identical. This is most noticeable where the former have large, "meaty" cotyledons or seed leaves. The pea affords a good example with which to illustrate this curious phase of vegetable and animal life. Before planting, the pea seed is comparatively small and wrinkled, but soon after being placed in the ground it becomes appreciably larger by the absorption of moisture. So, in like manner, the eggs of fishes swell in size after having been "laid," also by the absorption of water. When the pea seed has sprouted, the little plant for some days draws its sustenance not from the earth, but from the contents of the cotyledons or seed leaves. When the supply is exhausted, the rootlets begin to exercise their functions, and food is taken from the soil. When, after the proper period has arrived, the little fish struggles, tail foremost, from the egg, it is found that a sac is attached to its stomach. The little creature feeds on the contents of this sac in the same manner as the wee plant does on that of the cotyledons, until they are all absorbed. Then the young fish receives its supply of food in the ordinary manner. It is also a curious fact that the fertilization of the fish egg is performed almost in the same manner as is the same function in plant life—namely externally. W. E. MEEHAN,

Statistician Penna Fish Commission.

ELONGATION OF TREE TRUNKS.—It is a rather common error among people not very familiar with plants that the trunks or stems of all plants elongate, and that the branches starting from the main stem of a tree, five feet from the ground, say, will a year or two later be six or seven above the ground. This is not so. The first year, while the main stem or axis is growing, a small young branch may be carried with the growth, but usually only in the shape of a bud, even then. After that, the position of the branch is fixed.

THE GARDEN OF THE FAMOUS ROMAN ALCINOUS.

Four acres was the allotted space of ground,
Fenced with a green enclosure all around;
Tall, thriving trees confessed the fruitful mould;
The reddening apple ripens here to gold.
Here the blue fig with luscious juice o'erflows,
With deeper red the full pomegranate glows.
The branch here bends beneath the weighty pear,
And verdant olives flourish round the year.
Beds of all various herbs, for ever green,
In beauteous order terminate the scene.

POPE'S "HOMER"

EVERGREENS FOR GROUPING.—The accompanying illustration is intended to show a few of the evergreens used frequently in grouping. Commencing with the bushy specimen at the extreme right is *Retinispora plumosa*. This has been kept sheared annually, as it was not desired that large evergreens should occupy this position—a natural division between the rear and front lawns and nearing a path rounding a corner of the house. *R. plumosa* is a graceful evergreen in its growth, and it seems a pity to shear it oftener than once in two years, being sufficient to keep it compact, but of course it is sometimes necessary, as in this instance. Its golden variety is very beautiful and valuable for the same purpose,—in fact, it is more largely used than the green because of its color.

The second plant from the right is quite characteristic of the common arbor-vitæ, though it also has been sheared a trifle. Its rapid growth and upright habit commend it for many purposes. There are many varieties of this arbor-vitæ to give change and color in groupings. The variety *spiralis* has a slightly twisted growth which distinguishes it a trifle; *filifolia*, with its crested or fern-like foliage, is markedly different and maintains a more compact appearance—its growth naturally is slower.

In the foreground is seen a Globe Arbor-vitæ, a very slow-growing variety considering advancement in height. It grows evenly and with perfectly globular symmetry—it would seem to swell rather than grow. There are several varieties of globe-shaped arbor-vitæ; this one is known as *globosa* and has very pretty foliage. Variety *pumila* is very dark-green in color, and the foliage seems a little stiffer and less even. *Hoveyi* is similar in general habit, but grows a little taller than it is broad and is distinguished especially by what might be termed fan-shaped growth; the leaves on the twigs of each main branch are exactly opposite one another, making an evergreen ball in layers of growth. The Little Gem variety is the dwarfest of all arbor-vitæs; a five-years-old plant is but a small tuft of dwarfed growth that would defy the famous Japanese dwarfed evergreens. It is inclined to grow flat rather than round. One or two plants of a little larger growth could have been used to advantage in the foreground of the group illustrated—say a Tom Thumb Arbor-vitæ, the fine foliage of which more closely resembles a Retinispora, and a Chinese Golden Arbor-vitæ, *Biota orientalis aurea*. These grow a little taller and are very distinct.

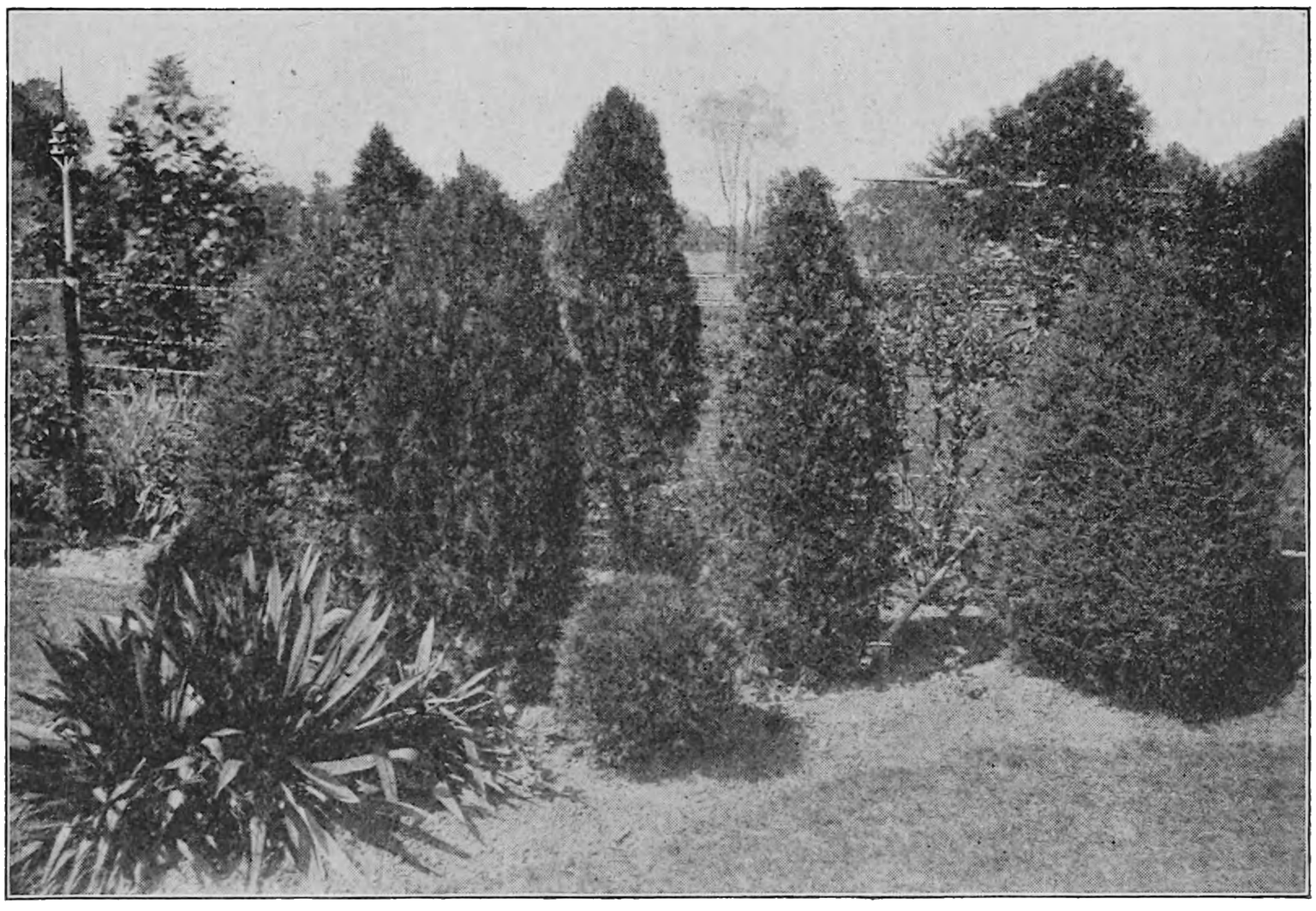
Immediately back of the Globe Arbor-vitæ is a *Biota orientalis*, or possibly it is its variety, *elegantissima*, popularly known as Rollinson's Golden Arbor-vitæ. Both are good for their color and upright habit of growth, as well as for hardiness. A similar plant is located a little back of the Globe and immediately to the left of it.

Most persons will recognize the Yucca in the foreground to the extreme left. This is a wonderful plant in many respects. A native of hot, dry and sandy places, most frequently, it thrives in the poorest situations. Its handsome stalk of white, bell-shaped, fragrant flowers is a charming landscape feature, especially with a background of foliage as a setting for the flowers. It is practicable, by the way, to plant the Iris or flag near Yuccas; the foliage is not very different in general appearance from a short distance, and apparently

from the same group one may have Iris flowers in May and those of the Yucca in June, or near those periods according to locality.

The two other evergreens in the group are identical with others already described. The whole illustration is presented not as an arrangement applicable for any position, though it looks very well where it is used, but rather to illustrate the growth of such plants suitable for grouping in general. One must always make the selection for beds to fit the surroundings and with future results in mind.

Evergreen bedding forms a prominent feature about the grounds of many Newport, R. I., residences. Golden varieties are greatly in favor,—in some cases they are almost excessive,—the kinds mostly used being *Retinispora plumosa aurea*, *R. pisifera aurea* and golden yews. This style differs from that in the illustration. The plants are banked about roadway entrances, at bends along the drives or by the dwellings or other buildings. They are massed and not partly individualized as pictured. In such cases it becomes necessary to move and rearrange them every three or four years or remain in danger of having the foliage die out from such close contact, as it surely will.



EVERGREEN GROUPING.

One may see much of interest at Newport in gardening. Here the rare Japanese Umbrella Pine is frequently used in bedding—a plant that hardly seems adaptable, yet which in good hands can be made to seem in perfect harmony. Commodore Gerry's gardener has shown considerable taste in this respect, and can show a beautiful lawn, and well-kept grounds generally, under more or less unfavorable conditions.

Mr. Hunnick, gardener for Frederick W. Vanderbilt, Esq., has made effective use of the little evergreen *Azalea amoena*, massing it about the front of the house. The display of flowers must be a wonderful sight.

Also at Newport we have another example of evergreen bedding on the grounds laid out by Mr. Charles H. Miller, landscape gardener, for E. J. Berwind, Esq. This is in a form exactly similar to what is termed summer bedding,—dwarf evergreens, or such as may be kept dwarf, being used in place of tender flowering plants. Golden Yews and Douglas' Golden Juniper were mostly used for this purpose, and heath for edging. They will all be kept closely clipped and formal, the location on terraces surrounding the residence making the design very appropriate.

Returning to our illustration, we want to refer in praise to the taste displayed in arranging the grounds and caring for the plants where the photograph was taken, the Philadelphia suburban residence of Mr. Justus H. Schwacke. Not large, comparatively, it is an example of what care and forethought will accomplish. Small properties will often require more judgment in laying out than large ones, where natural features may make a finished landscape with but little effort.

PLANTS FOR HOUSE CULTURE.—My answer to the question asked in MEEHANS' MONTHLY for December, "What flowering plants have you found best suited to ordinary house culture?" would be, from practical experience of my own, in having during the winter my windows filled with blooming plants, that the

Geraniums, of their diverse varieties of improved strains, are the most responsive and lasting bloomers. Then, also, the Begonias, of which the new Gloire de Lorraine is certainly the most prolific and brilliant, with its rosy-pink flowers, lasting for months at a time in their beauty. We had a display of them, in one of the greenhouses at our Elizabeth Park, arranged in hanging pans or baskets, which was very beautiful and much admired by all visitors. The Heliotrope, Bermuda Oxalis, Petunia, *Nicotiana affinis*, and Nasturtium are all good winter bloomers with ordinary care, with sunlight and living-room temperature, and with slight protection of a paper cover against drafts during the night. After Christmas, the Hyacinths and Tulips, with other diverse bulbs, begin their display. The Crab Cactus and Globe Mammillaria, as also the Rat-tail Cactus, are in bud at this time and will bloom by Christmas.

Of foliage plants succeeding best, I do greatly value the Begonias *rubra*, *metallica* and a few Rex varieties; and then the Coleus are grand, showy plants in the sunshine before the house window. MRS. SELIGER.

Hartford, Conn

The Umbrella Plant.—As a window plant for amateurs, the Umbrella Plant, *Cyperus alternifolius*, offers several advantages. It is nearly as ornamental as a palm, though of much more simple culture and rapid growth. It is comparatively free from insects, and will thrive in a sunless window. An abundance of root moisture and the foliage kept free from dust are the prime requisites. The roots should never be allowed to become dry. A very satisfactory method of growing is to pot in rich, alluvial soil and enclose the porous clay pot in a jardinière of water. Thus the necessary moisture is always at hand.

BESSIE L. PUTNAM.

[The Umbrella Plant may be grown in an aquarium very satisfactorily. Simply set pot and all right in the water, allowing the top to stand above the water.—Ed.]

Care of Plants.—Syringe carnation plants and roses at least once every two days with clear water. Tepid water about 45° to 50° is safest to use. Fuchsias will also require frequent syringing with clear water, especially on the underneath side of the foliage. Give Genistas and Azaleas plenty of water at the roots. The Azaleas should be syringed daily. Palms, *Ficus*, Dracænas (Cordylines), etc., should have their foliage sponged once every week or two. Easter lilies are very subject to aphis or green-fly. Examine the tips of the growth frequently and use a little dry tobacco dust or tobacco water as a preventive or remedy for these pests, as they are hard to eradicate if they once get possession of lilies and similar plants. Water all plants early in the day, and retain as moist an atmosphere as possible where the plants are growing.

Although the *Hoya carnosa* (Wax Plant) cannot be considered an ideal house plant, it will, under favorable conditions and culture, often produce quite a number of its beautiful, wax-like, sweetly-perfumed umbels of flowers.

Thoroughly good drainage is a very essential feature for successful culture and subsequent flowering of this plant.

When once the plants are well established, frequent re-potting is not necessary, once in every two or three years being sufficient if the drainage is perfect.

To flower them successfully the plants must be treated liberally, so as to produce as much young growth as possible early in spring. This young growth will usually produce in July or August a wealth of bloom.

W. HUNT, in *Canadian Horticulturist.*

Begonias and ferns are especially happy in a south window until about February 1st, when the sun becomes so powerful that the curtain must be drawn from ten in the morning until about three in the afternoon or they will be seriously burned.

Always have the water luke warm for the reason that a large number of our house plants come from the tropics. Give them a very generous soaking, not all at once, but wait five minutes between waterings and you will be surprised to see how much some of the plants will take up. I always water twice, and sometimes thrice, until the saucers are full, then give them a grand rest for three or four days, until the surface earth is dry to touch.

Watch your plants and if they do not look quite right, just carefully turn the pot down, striking the rim against some object by a quick rap, holding the plant and earth in the other hand, and you may be greatly surprised at what you find. Often the writer has found worms and insects sucking the life of the plant

stituent in bone meal is phosphoric acid, and this is also contained in wood ashes, though usually in a very much smaller proportion.

NEW OR RARE PLANTS.

MORE HYBRID WICHURAIANA ROSES.—Rose hybridizers have found a hobby, the last five years, in creating novelties with the *Wichuraiana* as one of the parents. The varieties produced have all, perhaps, been commendable, but before long it will doubtless be overdone, the variations so slight as to be unnecessary and confusing.

The variety Pink Roamer, one of the first set produced, can hardly be excelled as a single-flowered variety. Now we have among recent creations Lynch's hybrid, a semi-double, pink flower containing General Jacq. blood; Dorothy Perkins, a double pink, originating with Messrs. Jackson and Perkins, and having Mad. Gabriel Luizet Rose for one of the parents; and Pink Pearl, a double originating with Manda and hybridized with Meteor. Doubtless there are others already on the market or that will soon be disseminated. They all have more or less the habit of the *Wichuraiana*, which is popular in so many ways.

COLORADO FIR, PICEA CONCOLOR.—It is generally conceded that among evergreens, hardy and ornamental in the United States, none is more greatly to be admired than the Colorado Blue Spruce, *Abies pungens*. It is quite natural that any one thoroughly familiar with that beautiful Blue Spruce, especially in its highest-colored forms, would grant it the honors unquestioned; yet he who has enjoyed the privilege of strolling through the grounds of Mrs. Anderson, of Greenwich, Conn., which abound in magnificent specimen evergreens of the rarest kinds, or through Mr. H. H. Hunnewell's pinetum, at Wellesley, Mass., would find difficulty in choosing the choicest evergreen.

We illustrate a specimen of *Picea concolor* in Mrs. Anderson's collection, which, though the photograph lacks a little detail and the natural color and life which cannot be seen except with the real object before you, will be recognized as being a very fine specimen. One must really see the plant and know of its character to fully appreciate its worth. Like the Blue Spruce, there is a wide range of color in the foliage among seedling plants. The writer knows of a specimen as "blue" as the bluest spruce; his first view of it was a revelation, and, indeed, such a shade of "blue" may be considered very uncommon. Nevertheless, it shows its capabilities in that direction. Unlike the former, Colorado Firs lacking color are still very attractive.

The Colorado Fir also vies with the Blue Spruce in hardiness. It will stand the severest winter and raking winds,—a reputation such Rocky Mountain evergreens ought to bear naturally.

While the Blue Spruce is sharp and stiff to the touch, our subject is rather soft and more graceful, making a very handsome specimen for lawn planting. The leaves are longer and more spreading rather than half-rounding the stem as in the spruce. Surely it is an evergreen that must eventually come more to the front in popular favor.

Mr. Robert Williamson, Mrs. Anderson's gardener, is properly proud of their fine trees, and it was through his kindness we were enabled to illustrate this specimen and the *Cedrus Atlantica glauca* in Vol. X, No. 12.

THE HARDY FLOWER GARDEN.

SAXIFRAGA CRASSIFOLIA.—The evergreen character of *Saxifraga crassifolia* makes it very attractive at all times of the year, the broad, bright-green leaves being conspicuous in summer, and also in the bronze shades in winter. It is almost the first flower to bloom in spring. So anxious are they to bask in the warm spring sun the flowers peep out from amongst the low leaves before winter is fairly gone, and in such haste they are not borne on stems as they are later in spring, and as illustrated in MEEHANS' MONTHLY, Vol. X, No. 5. This early spring-blooming character naturally lends the plant to good forcing privileges, an attention it has not yet received.

IRIS PUMILA.—Few plants have delighted the writer more than the dwarf Iris, *I. pumila*. Not that it is a remarkably showy plant for general garden purposes, although it is fairly good in that respect, but more because of its many unique characters. It is just as dwarf as it can be, the little tufts of foliage being

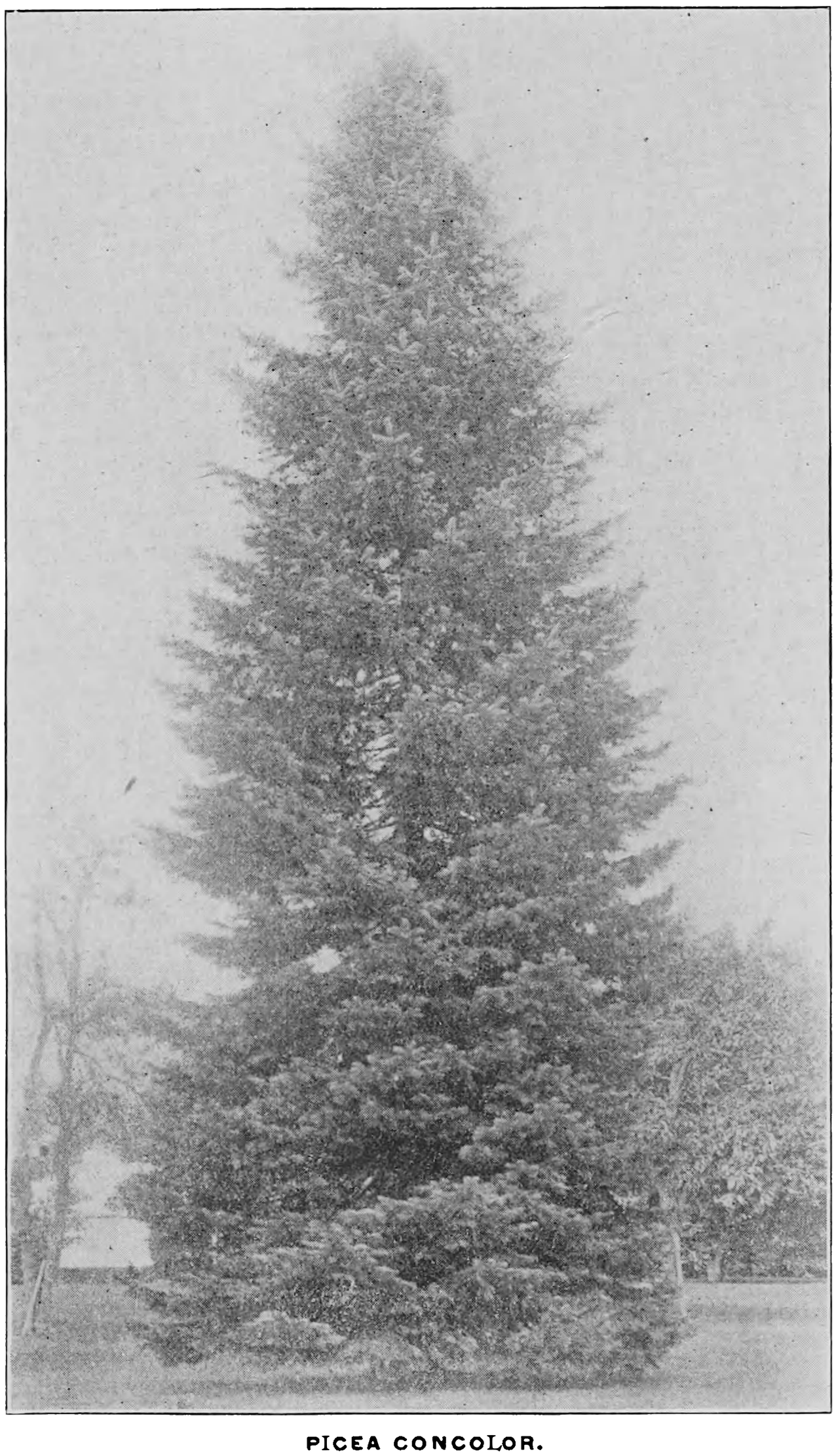
little more than six inches in height, and the bright flowers usually nestle amongst them.

There are several varieties of *pumila*, but one of the best is a rich shade of purple. It is the earliest of all Iris to flower in spring—so early that its inclinations advance the blooming period to the previous year, and one may see numerous flowers in late fall,—in fact, among a number of plants there are nearly always a few flowers in sight.

This Iris will be recognized as being very valuable for bordering beds or clumps of other Iris, or for bordering any beds of herbaceous plants. The species of *Iris* are so numerous in cultivation, it is an easy matter, by careful selection, to have a bed of continuous bloom for many months.

NEW VIOLET, "PINK GEM."—A clear pink violet is undoubtedly a new shade of color in hardy violets, and is sure to awaken wide interest in the new Pink Gem. A little bed of it will produce a sheet of bloom, so to speak, and will increase and soon carpet the ground.

DICENTRA SPECTABILIS.—Too much praise cannot be given the well-known Bleeding Heart, *Dicentra spectabilis*, as an all-round plant. One of the first herbaceous plants to bloom in spring, it is invaluable in mixed borders of similar plants, or planted in solitary beds to be filled later with summer plants. To many, a bed of it would be more attractive than of tulips or hyacinths, and would be more useful, for there is no more graceful, lasting and adaptable cut flower for vases. It may be forced in winter with greatest ease, and is, therefore, an excellent plant for amateurs. The form and beautiful color of the flowers are attractive to every one.



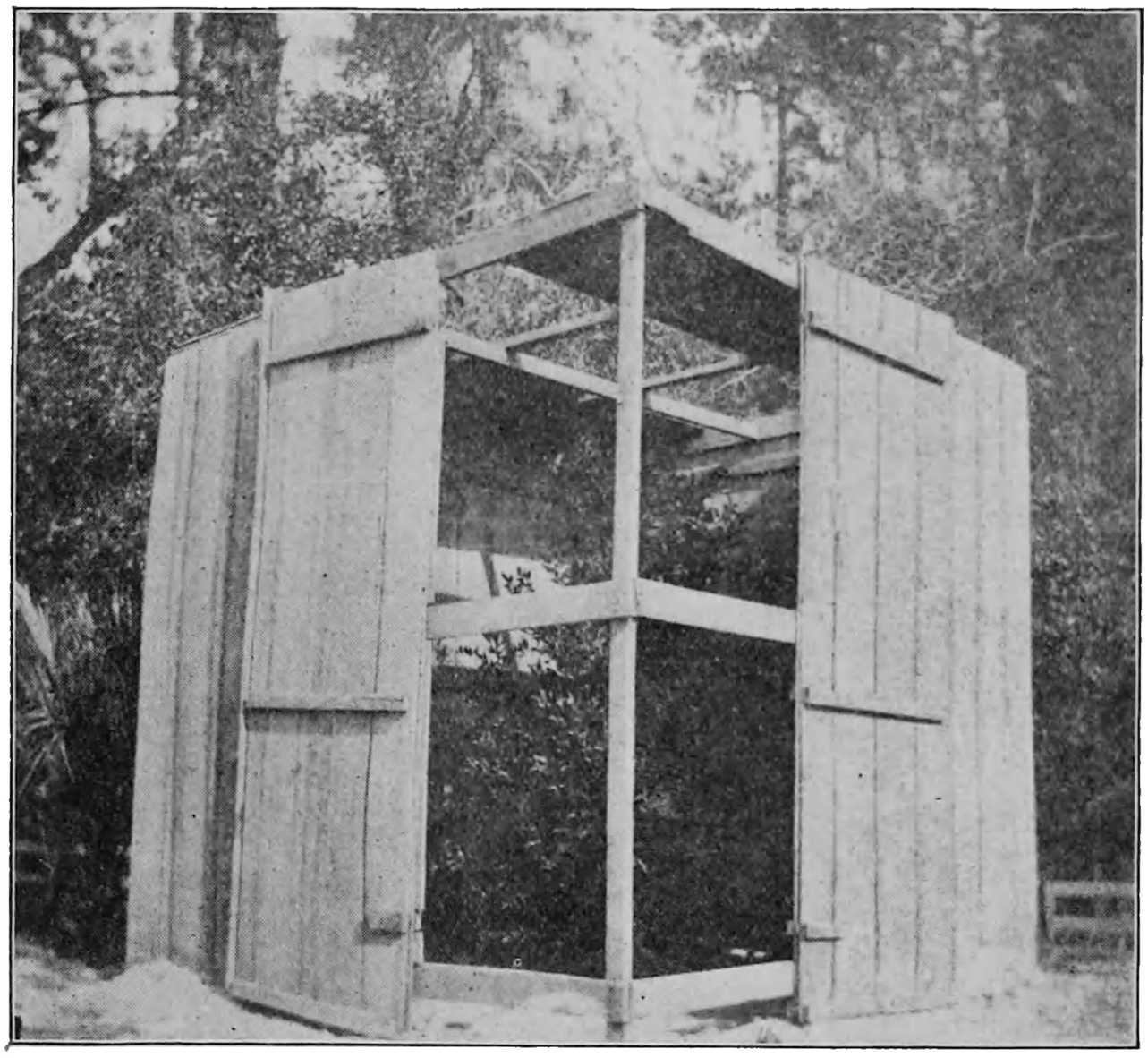
PICEA CONCOLOR.

FRUITS AND VEGETABLES.

WINTER ORCHARD CULTIVATION.—Frequently the writer has taken occasion to issue a caution that statements regulating horticultural work should not be considered suitable for every purpose to which they have been applied. The successful horticulturist or gardener is he who reasons largely for himself, realizing that information and instruction is only generally applicable, and must be made to fit the conditions in hand. This is brought up forcibly by a statement in the *American Agriculturist* seeming to contradict that in

MEEHANS' MONTHLY for December, under the head of "Winter Orchard Work."

We believe Mr. Roland Morrill, of Michigan, to be one of the best authorities on peach-growing; his success is good evidence of that. He states: "I would not, under any circumstances, practice what I have seen in some southern orchards, that is winter plowing or cultivation. I am fully convinced of two things in peach culture. First, any disturbance of soil or roots while a tree is dormant or in a resting stage is injurious. I am aware that the inclination to do things out of season, as a matter of convenience, is sometimes almost irresistible But in my experience I have always paid a penalty when I violated these laws of nature."



PROTECTING ORANGE TREES FROM FROST.

Mr. Morrill's reasons for his stand are explained by a writer in the *National Fruit-grower* partly as follows: "It is well known that cultivation not only prevents the escape of the soil water, but it also stops the radiation of heat which neutralizes the cold air so as to prevent frost. Uncultivated ground will absorb heat on a warm day and give it back to the air at night, so that plants on fresh cultivated soil will always be injured while they would entirely escape on a compact surface."

This question of heat or cold and their effect is one of the conditions that may seldom arise. Where the peach is perfectly hardy under every known circumstance, it is safe to assume a little additional cold under the natural law explained will do no harm. Where there is doubt, as in Michigan, the suggestion must be handled with judgment.

Again, objection is made to the disturbance of the roots when the trees are dormant. Of course, one must be reasonable in what he does. Most roots contain a store of food of which the plant should not be robbed when it needs it. But is reasonable cultivation likely to disturb them? Towards the surface of the ground may usually be found a great abundance of fine, hair-like roots,—but these are almost all annual, they are past harm in winter and simply occur as feeders in the growing season. And grant that just a few of the important roots be injured, the regular winter or early spring pruning, which Mr. Morrill approves, would counterbalance the loss of roots.

If this reasoning be sound, then it would seem to resolve itself into questions of hardiness—whether or not the trees in a particular locality can stand a little more cold in the soil; and whether or not the proposed cultivation will disturb good roots to any serious extent.

PROTECTING ORANGE TREES FROM FROST.—Following the illustration of an orange orchard in Florida protected from frost, we present another showing a further plan where only a few trees are grown. The board removed from the top and the doors on the side allow circulation of air and some light. The young plant in the enclosure is just coming into bearing and is one of the farthest north in Florida at the present time.

EARLY ORANGES.—It was reported that the first carload of Californian oranges was on its way East the last of October, breaking all records for earliness. Florida oranges began coming just previously, and Porto Rico oranges preceded them. Porto Rico being below the frost line, has an advantage over Lower California and Florida, where precautions against and losses from frost exist.

A BRIEF SKETCH OF THE LIFE OF THOMAS MEEHAN.*

No man is born into the world, whose work
Is not born with him,—there is always work,
And tools to work withal, for those who will,—
And blest are the horny hands of toil!
The busy world shoves angrily aside
The man who stands with arms akimbo set,
Until occasion tells him what to do,—
And he who waits to have his task marked out
Shall die and leave his errand unfulfilled. —LOWELL.

Had Thomas Meehan before him, from boyhood till death called him from earthly labor, the foregoing quotation as his prime motive in life, he could not more fully have exemplified his belief in the sentiments expressed. Not necessarily did his hands feel the burden of toil, though he did much more than the average man's share in that respect, but rather did he typify men who give all their powers of body and mind to whatever lies before them that is high, noble and in the path of duty.

He was born March 21, 1826, at Potter's Bar, near London, the birthplace of his mother. His father was of an old Irish family of Carrick-on-Suir, Ireland.

The earliest recollections of him that we can command from any immediate source show him in very early youth assisting his father and mother in the general support of the family by some of the various means possible at home and apart from the regular income the head would receive from his position as gardener on a large English estate. And right here existed that whole-souled energy that never faltered to the last. With nothing but the simple rudiments of education taught by his mother, and a little schooling for two or three years, by observation and study he advanced himself diligently and laid the foundation for a knowledge wonderful in extent even though elementary in all but his chosen specialties.

The incident so frequently told of late concerning his discovery of a certain maternal protection extended by snakes to their young, is true, and while the information gained showed no particular effort on his part, the observation and recording of the fact at about the age of eight years showed a studious tendency for culling knowledge from things about him. The protection referred to was upon the alarming of a snake and her young. The mother would open her mouth and permit the young to enter her body and remain till danger was past. The idea would seem at first to most persons somewhat absurd, especially as the young of a snake are produced in very large numbers, so at the publishing not many years later of a boyish essay prepared at the time, it is not to be wondered that it called forth criticism. Dr. Lindley, an eminent horticulturist and botanist of England, ridiculed the idea and singularly burlesqued it by an illustration in the *Gardeners' Chronicle* under the title of "Meehan's Viper." A snake was represented with its mouth open and little ones crawling in it. The tail of the viper was spear-shape and with it a mouse had been impaled and was being carried to the snake's mouth. But Prof. Brown Goode, of the Smithsonian Institute, took up the subject and proved the lad correct, thus adding a most singular fact hitherto unrecorded. The caricature was never fully understood by many till explained by Mr. Meehan but a year or two ago.

Several attempts were made to secure a school education for the boy, but from lack of patronage the schools could not be maintained, and his education received but little impulse from that score, till at the age of 10, when he attended a Lancastrian school for two years, at the end of which time he ceased and went to work under his father, then in the employ of Colonel Francis Vernon Harcourt, at St. Clare, Ryde, Isle of Wight. At night he would study

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* Within the past six weeks, the death of Thomas Meehan has been chronicled, and the history of his life has been briefly told in all the prominent sections of the globe It seems like repetition to attempt a sketch here, the limited space making it necessary to hold to facts that are already so largely known; but as we wrote in the December issue of the fitness in closing the volume of his work by including his portrait, so we consider it a privilege to record something of the life of him whom we feel will in spirit help to guide our efforts to continue the work he laid down. Fearing to take more space than we should in justice to those whose interest in horticultural lines requires the usual information, we may not speak of as much as we would like, especially to those older readers of MEEHANS' MONTHLY who have been drawn to a closer acquaintance with the past senior conductor.--[EDITOR.]

the Linnæan System of Botany and read horticultural periodicals, for which he personally subscribed. From his own savings, from time to time he purchased standard books from which he continued his studies. This persistency in self-education was a matter of considerable pride to his watchful parents, and was used as a stimulus to the younger children.

Thomas Meehan has been made known to the world most largely by his writings, and these commenced for publication when he was but twelve years old; the first, preceding the circulation of the snake essay, was on the making of double-flowering stocks from single ones. This was followed in two or three years by a scientific paper on the sensitive nature of the stamens of the *Portulaca*. About that time he also produced the first hybrid Fuchsia. These all coming to the attention of the Royal Wernerian Society, he was nominated to membership in that exclusive, but prominent, scientific organization, in all probability without their knowledge of his being a mere lad.

Edward Meehan, the father of Thomas, was considered one of the best gardeners in England. He had a remarkable knowledge of plants and was considered a good botanist in certain respects. Doubtless the son owed much for his own foundation of horticultural knowledge to his father's early tuition. While relinquishing his daily studies, Thomas determined to continue his education, and so, associating himself with a number of young men between the ages of fifteen and twenty-one, a scheme of self-education was carried on, including ancient and modern languages, mathematics, chemistry, and other studies of a high order. Without a professional teacher, the plan was that the one showing most proficiency in any one branch should lead the others. It is believed that the once popular Mechanic's Institutes originated from the work of these young men.

At the early age of seventeen the young gardener obtained a position as head-gardener to Paymaster Vaux, from which he was obliged to resign because of sickness and his youthful appearance. At 18 he was with Sir Augustus Clifford, near Ryde. He was offered charge of Appley at 19, but was induced to go instead to Kew Gardens, where his horticultural education was immensely broadened. Here he successively worked in and had charge of the various houses containing plants from all over the world.

One of the methods taken to familiarize himself with the plants at Kew was by cataloguing them, and this he did, examining into the history of each from time to time. This catalogue, preserved without much reason, is now evidence of plants existing there at that time in spite of contrary statements. Upwards of 1,600 plants were enumerated.

Many experiences at Kew, as well as during the time of his employment on the several estates as gardener, gave food for pleasant recollections and recital to close friends in after years. Not infrequently, they were associated with Queen Victoria, then but a young girl, for she took seeming interest in plants and flowers and visited Kew Gardens frequently. In MEEHANS' MONTHLY for January, 1899, the illustration of a banana flower led to recollections which were rather amusing. Without going into details, which many of our readers will already recall, it related to his holding up for the Queen's view a bunch of bananas, just produced at Kew; and while Sir Wm. Hooker narrated at length the history of bananas, the bunch grew seemingly heavier and induced the holder to put his hat on and take the bunch in both hands. This procured for him a scolding from Sir William after the Queen's departure.

About the period of his stay at Kew he must have written considerable for publication —not solely in relation to botanical or horticultural matters, but of affairs that were holding the attention of men in various lines. He may have been fond of an argument then, but always with a firm belief in the right of the cause he advocated. The language of his writing was remarkably thoughtful and well chosen for a self-educated young man, and must have earned him the considerate attention of wise and older men.

As correctly stated in other recent accounts, while at Kew he became intimate with John Murray, who afterwards went to America, and became a popular Unitarian minister, but he could not impress young Meehan that America presented better openings for a young man than England. But subsequently he made an engagement with the Earl of Shrewsbury, through the friendship for him of the Countess of Clare, to be head gardener at Alton Towers. Soon after

the engagement he received notice that only persons of one particular religious denomination were engaged in that establishment—that the engagement with him must therefore be cancelled. Annoyed that a matter of this kind should be in the way of advancement, he decided to follow his friend Murray to America if the chance offered. Murray had found a starting point with Robert Buist, the famous Philadelphia nurseryman of that time. A letter to Mr. Buist brought the promise to aid Meehan also in the future. There is little foundation for the statement that political reasons induced Sir W. Hooker to look with disfavor on Meehan. The only ground for disapproval was that Meehan and some others, while willing to act as special constables at Kew during the Chartist riots, objected to serve in that capacity in any other part of London. There was also some disagreement about the taking of specimens by young gardeners, Meehan refusing to divulge the names of some whom he knew to have been guilty of the practice. Both Sir Wm. Hooker and the curator, John Smith, were subsequently on friendly terms with Meehan.

After serving the two years at Kew he found employment in the nursery of Bridgewater Page, of Southampton. After a short time here, through the favor of Lady Catharine Vernon Harcourt, he was engaged as gardener to the Earl of Hardwicke, at Sidney Lodge.

Here again he found good friends, and the Earl and Countess, before starting on a long voyage, arranged that on his return the aged gardener, Donn, at Wimpole Hall, at Cambridge, should be pensioned, and that he should have his place. Following this Mr. Buist wrote that he might now come to him. The struggle between having the chance of succeeding to such a high position, and going across the water was severe; but America won, and Mr. Meehan reached Philadelphia the day following his twenty-second birthday. The voyage was in several ways a remarkable one. The sailing vessel, the Devonshire, under a skilled captain, made the trip in the then speedy time of two weeks, and attended by a fierce gale in which it was nearly lost. Here the subject of our sketch figured prominently in insuring the safety of the vessel by executing important commands of the captain, which, in the storm, were not carried to the crew.

After being in Mr. Buist's employ about a year's time as superintendent of his nurseries, Mr. Meehan was transferred to the sole charge of Bartram's Gardens, then owned by Mr. Andrew M. Eastwick, the change being made under an agreement between Buist and Eastwick that the former should secure some one for him in the latter's absence in Russia. These gardens were many years afterwards consecrated to public use when, as a City Councilman of Philadelphia, the former gardener secured them as a public park.

About the time of his stay at Eastwick's, occurred an incident that might have cost him his life. The details would furnish an interesting narrative, but we must be brief. On the occasion of one of the annual freshets in the Schuylkill River, he went out single-handed in a small boat to the rescue of two men being washed out into the wide mouth of the Delaware in a canal boat. After reaching the latter, it was found impracticable to leave, and he retired to the cabin to dry his clothes. While there the boat completely capsized. Air confined in the cabin gave him a moment to exercise his rare presence of mind, and he dived down and through the hold rising to the surface outside. His escape seemed a miracle. After swimming to shore, and more or less exhausted, he returned part way to aid the two other men who had just appeared after the capsizing.

In 1852 he was called to the charge of the grounds and conservatories of Mr. Caleb Cope, ex-president of the Pennsylvania Horticultural Society, at Holmesburg, now occupied by the Edwin Forrest Home. Here he took to wife Catharine Colflesh, daughter of a noted farmer, a neighbor of Eastwick's. Mr. Cope had received from Kew seed of the *Victoria regia*, for which a large house was specially erected. Here had just been flowered that queen of water lilies for the first time in the United States.

While at Bartram's Gardens, or, perhaps shortly after, Mr. Meehan conceived the idea of preparing a small volume for the numerous admirers of the "indefatigable botanist" Bartram, describing the trees then growing in his far-famed old botanic garden.

The collection of plants there then was considered the finest of full-grown trees in this country, though since run down and far surpassed by others. But at the suggestion of

Dr. William Darlington, of West Chester, Pa., an eminent botanist, he was induced to enlarge on his notes prepared, and in 1853 was published his first and only complete book, under the title of "The American Handbook of Ornamental Trees," dedicated "To the Memory of John Bartram, the Patriarch of American Arboriculture." The book was, and still remains valuable largely from its being a record of facts. Every plant described (about 300) was personally known to the author.

It has been said Mr. Meehan was a prolific writer. Scanning his life we see no point where his pen may have been long at rest. At Buist's, Eastwick's and Cope's, he wrote frequently for publication in the "Horticulturist," one of the best articles of which, on Landscape Gardening subjects, we consider of such interest as to merit reproduction in a future issue of this magazine.

Towards the close of 1853, his ideas of advancement led him to consider the abandonment of private gardening and the establishing of a nursery, and as opportunities were given he collected seeds with that end in view. In the spring of 1854, with his savings of $1000 he rented ground in upper Germantown, now built upon and divided by a street bearing his name, and established the Germantown Nurseries, and at Upper Dublin ground was bought for the nursery proper. This was the first attempt to make a specialty of the many beautiful trees and shrubs of America. The combination of places at Upper Dublin and Germantown was finally found too expensive and inconvenient to operate. This venture he considered as invaluable experience and prompted his keeping close to the city thereafter, locating on a larger tract quite near the first, increasing from time to time till seventy-five acres were completely covered and other extensions became necessary.

The "Gardeners' Monthly" was established in 1859 with Thomas Meehan as editor, in which capacity he remained for thirty years, when publication ceased upon the death of the publishers. It was the foremost horticultural magazine of that period, and was a field for the publication of articles by the best horticulturists in America.

In 1860 the Philadelphia Academy of Natural Sciences elected Mr. Meehan to membership, and to its affairs he gave freely of his time and was regularly active. His "Contributions to the Life History of Plants," published through the proceedings of this institution, are considered of eminent value to science. But a short time before his demise, he had presented a paper on the "Bending of Mature Wood in Trees," the result of years of thought and observation. Still other papers were in course of preparation. He was chairman of the Publication Committee, and for twenty-three years Senior Vice-President.

For sixteen years he was the agricultural editor of "Forney's Weekly Press," besides horticultural editor and contributor to a number of monthly and weekly papers and magazines. He was for thirty years regular editorial contributor to the science department of the New York *Independent*.

It is said that when the Civil War was imminent, he printed and circulated the Philadelphia end of the Crittenden resolutions. At the close of the war he went, at the instance of Col. Forney, to confer with the Southern leaders, and offer them the influence of "Forney's Press" in building up Southern industry.

In 1868 he became a member of the American Association for the Advancement of Science and was elected a fellow in 1875. Its meetings he attended with regularity for many years till certain physical inconveniences induced him to give up traveling. Before this great body of scientists he read important papers, prominent among which was "A Contribution to the Doctrine of Evolution and the Theory of Natural Selection." This was prepared especially in response to a general request by his scientific friends who knew of his progress in that line of thought and study. Several times had he been invited to accept the vice-presidency of the association, but for personal reasons he felt it necessary to refuse. By many he was ranked with and was intimate with Darwin and other men in evolutionary work, and was the promulgator of the doctrine that self-sacrifice enters into nature quite as much as the struggle for existence. He was also the practical discoverer that the lower state of vitality in vegetable life was apt to produce male flowers and the stronger and more vigorous, the female.

He was an active member of the American Philosophical Society of Philadelphia, eminent for its distribution of useful knowledge, and was chairman of its Standing Committee on the Michaux Legacy. He was Professor of Botany to the Pennsylvania Horticultural Society; one of the founders and a trustee of the Philadelphia Commercial Museums; an originator of the Penn Club, an organization for the welcoming of distinguished guests to the city of Philadelphia; an early and active member of the Pennsylvania State Horticultural Association, and the American Pomological Society, of which he was lately chosen vice-president; an originator and active worker in the Germantown Horticultural Society, where he lectured, monthly and for many years, on popular topics before interested local audiences. Besides these well-known connections, there were many organizations that enrolled him as an honorary or a corresponding member, both foreign and local. Seven years ago a new genus of plants was named Meehania in his honor.

A few years ago on the occasion of his oldest son's trip to Greenland on a relief expedition to Lieut. Peary, a new glacier was discovered and named the Thomas Meehan Glacier.

Almost all the noted botanists, scientists, horticulturists and agriculturists of his time could be classed as acquaintances of Thomas Meehan. Many would profess more, being bound by personal intimacy or by long-continued correspondence. Not only in this country but abroad did his circle of friends exist. Baron Ferdinand Von Mueller,—whose portrait and occasional writings in the early volumes of MEEHANS' MONTHLY, and who did so much in the horticultural development of Australia, made him familiar to a few of our readers,—professed warm friendship and was a life-long correspondent. The Comté de Paris, whose efforts to reclaim the throne of France will be well remembered, was an enthusiast on plants and established a warm friendship, mainly through years of correspondence, with Prof. Meehan. They met but once or twice. The Comté's photograph with friendly greetings in his own hand-writing was always highly treasured. While Darwin's doctrines were frequently attacked in certain weak points, or extended in the light of personal thought and investigation, in their essential points he had the support of Thomas Meehan, and strong friendly relations existed between them. Dr. Masters, of the London *Gardeners' Chronicle*, and Mr. George Nicholson, until quite recently Curator of Royal Botanic Gardens, Kew, were among his personal friends.

Aside from his circle of scientific friends, he had a host gained in his public life. In 1882 he was elected a member of Common Councils, the lower legislative body of the city of Philadelphia, where he remained a faithful working member till his death. With one other he divided the honored title of the Father of the House, from his long period of service. He was never absent from his seat, but for a couple of weeks' sickness. A short time before he was elected to the local School Board, which position he held till last January. While he took a broad interest in all affairs of the city, he took schools and small parks especially under his care. His last public act was the presentation, on October 3rd, of a bill to raise $2,000,000 for the erection of new school buildings. By his foresight, new schools have been provided for in the securing of land well in advance of their needs. The colored population owe their advancement in public education to his untiring efforts in their behalf. He introduced separate schools for their instruction under teachers of their own race. For this his memory is recently honored by the naming of one of these schools for him. Soon after entering Councils, Mr. Meehan began a movement for the establishment of small parks, and through his persistent efforts the organization of the City Parks' Association was formed and the public interested. Something like twenty-eight of these small parks and breathing places were added to the city mainly through his efforts. In recognition of his labors, Mr. Meehan was given, eight years ago, a large silver plaque, on which were engraved a record of his work and the representation of four of the most famous of the newly acquired parks. This and the Veitch Medal presented him last year for "distinguished services in botany and horticulture" (only the third American to be so honored) pleased him more perhaps than any honors that ever came to him—for it must be known he cared little for honors. When he first took his place in Councils, Germantown had but little more than dirt and muddy roads. Now and almost entirely by his efforts, not one such is to be seen except of very recent opening and those on the outskirts kept back by

a certain rate of taxation preventing the pressure of such improvements. Of his personal standing in the legislative body we prefer to quote from *City and State:* "Mr. Meehan was one of the few Councilmen against whose integrity never a whisper has been heard. He had won the respect of his fellow members and served his constituents well;" and the following extract from a letter from a fellow member published in the same paper: "My affection for him was so great as to make any written tribute to his memory altogether inadequate. No man in the Council Chamber was more watchful of the public interests, more intelligent in the discussion of public questions, and more persistent in opposition to pernicious legislation. No measure was ever passed without his careful consideration, and the belief in his intelligence and integrity was so widespread among the members as to make his views of commanding importance to all thoughtful men. He never spoke unnecessary words. He never spoke unkind words. He was a thorough democrat in the best sense of the term. All men could approach him and he met all with kindness. He hated wrong-doing and voted and worked persistently against the betrayal of the city's interests for the advantage of private corporations, but he never questioned the motives of his fellow members, and he made no enemies. Great as was his opposition to bad legislation, greater still was his initiative in constructive legislation. At the beginning of every councilmanic year he would introduce more bills than any other member. These he would follow through committee and on the floor until they were enacted into laws. The journals of Common Council for the past twenty years are volumes that should be treasured by his family as an epitome of his useful life. There should be grateful recognition of his services to the cause of education. The story of his life—quiet, unpretentious, beautiful, and successful—should be told to every pupil of our public schools, for it was for those boys and girls that he was ever solicitous."

Poetry had a comparatively unexpressed though strong part in the being of Thomas Meehan. His were the beautiful selections used constantly in this magazine, of which the quotations used in this article are reprints. They contain the highest sentiments and breathe of his own nature.

We have touched on many of the events and phases of his life proudly conscious of the great fount of knowledge, wisdom, and works of good and influence in behalf of his fellow men and his city, but there is at least one of which we cannot write—that knowledge of his quiet, peaceful home life, surrounded only by his plants, his books and his family; of the struggles of those early days to be successful in every undertaking—his business—his scientific pursuits—the earning of his daily bread. These are subjects solely for the helpmeet who contributes so largely to the successes, and to the family who are now left to feed upon the fond memories of the days and hours past so full of the incidents and teachings that exhale from every pure and noble life.

O Death! the victory is not thine,
When life for love we give,—
And long as yon bright sun shall shine,
The Heliotrope will live.

Will live in other hearts to bloom,
For love can never die,
But sheds on earth its sweet perfume,
Eternal as the sky. —CLARKE.

LITERARY REVIEW AND GENERAL NOTES.

THE FUTURE OF MEEHANS' MONTHLY.--Commencing with the current issue, this magazine will be edited solely by S. Mendelson Meehan, one of the former assistant conductors As the Senior Conductor of MEEHANS' MONTHLY, Thomas Meehan, was recognized as the author of the leading chapters accompanying the colored plates in each issue and practically all the scientific facts and remarks contained in the body of the work, it is natural that, with the laying down of his pen, the readers, who have become accustomed to his writings, and learned to appreciate the breadth of knowledge he possessed, will desire to know something of the future of the publication, and along what lines the editorial work will run. As noted in the biographical sketch, so many leading chapters were prepared in advance that that portion of the work will continue without change for a long time to come, after which, if the personal instruction of the author and a good knowledge of his style by the present editor avail, the work will be continued to the best of the latter's ability, and in accordance with an expressed desire.

The present editor has long been closely identified with the work of the MONTHLY and has the same interests at heart that existed in the previous conduct of the magazine, so he hopes he may be able to make it instructive to the readers and hold their patronage. The old subscribers and the contributors are thoroughly familiar to him and seem like old friends. Needless to say the latter are just as welcome as heretofore, and adding to their number from the ranks is looked forward to.

It has been a policy of MEEHANS' MONTHLY to make its pages helpful in the broadest sense; no request for information on any horticultural or scientific subject but will receive careful attention. Even as information is willingly given, the readers are urged to communicate with each other through the pages on subjects of general interest with which they are familiar. Where there is silence from the readers, the editor will be puzzled to know if he is treating subjects of real interest. Horticultural magazines would have a better support if the subscribers would occasionally express themselves.

The editor fully realizes the disparity of knowledge and experience that will be disclosed by the change, yet would not wish leniency nor allowance shown him in judging the views expressed by him, as the publication must stand for horticultural truth and knowledge. He looks forward with great confidence in the perfect support of the horticultural world.

FOREST TREES AND FOREST SCENERY (illustrated), by G. Frederick Schwarz, The Grafton Press, New York, is a delightfully interesting book even to those who know but a little about forests. The reader is brought to a comparative study of forest trees as individuals and in their general aspect as a whole—not exhaustively, though nothing is left unsaid that is necessary to a careful treatment of the subject with the end in view of opening one's eyes to the beautiful forms and habits of the trees of the forest. It is so entertainingly written, the casual introduction of forestry problems will thrust itself on no one,—in other words, it is a book that the trained and untrained will read from beginning to end and enjoy alike.

We are led to appreciate the natural beauty of our forests compared with the artificial forests of Europe; to deplore the shameful ravaging of certain forests as especially exhibited in the South, where available timber is cut or used in drawing turpentine and resin, and the remainder allowed to take care of itself, forming a scene of desolation; we acknowledge the oncoming systematic forestry necessary for preservation, and look forward to means and conditions that will not lose to us the sylvan beauty which should exist to the delight of our pastoral temperaments.

The author has avoided the use of botanical names and terms in the body of the work, but ends with a complete index that is quite sufficient for all purposes, and commends it to the unfamiliar, who are always averse to being confronted with Latin names.


3
1

MIMULUS RINGENS.

GAPING MONKEY-FLOWER.

NATURAL ORDER, SCROPHULARIACEÆ.

MIMULUS RINGENS, Linnæus.—Stem square, about two feet high; leaves oblong or lanceolate, closely sessile by an auriculate, partly clasping base, serrate; pedicels longer than the flower; calyx-teeth subulate, slender; seed-coat rather loose, cellular. Gray's *Synoptical Flora of North America.* See also Gray's *Manual of the Botany of the Northern United States*, Chapman's *Flora of the Southern United States*, Britton and Brown's *Illustrated Flora of the Northern States and Canada*, and Wood's *Class-Book of Botany.*

The little family of monkey flowers is well known in gardens. The western species, *Mimulus luteus*, is the one that has had the most to do with its popularity, as it is chiefly from this one that the numerous beautiful forms have been produced. The flowers are often painted and spotted in various fanciful ways, suggestive of the painted harlequins or mimics of the theatre, and from this the botanical name *Mimulus* is derived, and not from any resemblance to an ape or a monkey, as popularly supposed. Linnæus himself tells us that a "masked mimic" suggested the botanical name to him. This great botanist, however, knew well the value of retaining connection with ancient history wherever practicable. It was his custom to adopt for the designations of his genera and species such terms that had been applied either to the same or allied plants. The old Romans gave the name of *Mimmulus* to what we now know as the *Rhinanthus* or Rattle-box plant. Some of the fathers of modern botany anterior to Linnæus had associated the modern *Mimulus* with *Gratiola*, *Euphrasia*, *Pedicularis*, and other allies of the Rattle-box,—and it would have been in accordance with the usual practice of Linnæus to have adopted *Mimulus* on this account. However, the family has come to be known as monkey-flowers, and will doubtlessly continue so, and our text-books will probably continue to give the origin of the botanical name as from "a Greek word, signifying a monkey." Resemblances in flowers are, however, far fetched. Dr. Mitchell, one of our early American botanists, and in whose honor Linnæus named the pretty Partridge Berry, *Mitchella repens*, thought he saw in the unopened flowers a resemblance to a dog's snout, and, regarding our two eastern species as worthy of being formed into a separate genus, proposed the name *Cynorrhyncus* for it. The dog's snout may not be clearly defined in the flower,—but it certainly offers nothing suggestive of the face of either a monkey or a harlequin, as some of its western brethren do. The habit that many botanists have, who think they are called on to give a common, as well as a botanical name to the plant they describe, of indolently offering a translation of the Latin, instead of industriously searching for a common name already in circulation for it, is not often successful. They rarely come into common use. In this chapter the early name of "gaping monkey-flower," given by the botanists and adopted here, is never heard among the common people. "Dog-snout" would be much more likely to win popularity.

Our plant has, indeed, in few ways received popular attention. It does not win the passer-by

> "Like a sweet flow'r that on the breeze
> Sheds its rich fragrance."

It, moreover, has no ambition to push itself forward into high and prominent places where it may receive the applause of the multitude, but modestly confines itself to the borders of swamps where its beauty must be sought for by the genuine lover of wild flowers. One might almost imagine it as following the poet Gay in remarking that

> "Coxcombs are of all ranks and kinds,
> They're not to age or sex confined,
> Of rich, or poor, or great, or small,
> 'Tis vanity besets them all."

In polite history it has found no place, and nowhere in medicine has any virtue been claimed for it. So far as yet has been developed, its place in nature has simply been to beautify the waste spots of the earth,—a special provision of Providence the late Duke of Argyle insisted was one of the great laws of nature,—quite as much as an enticement to insects to visit for the purpose of securing cross-fertilization.

In connection with the subject of cross-fertilization, a singular behavior of our plant has been referred to this supposed arrangement. The stigma is formed of two thin plates which are irritable like the leaves of the sensitive plant. About the time when the pistil is ready to receive the pollen, these plates expand. When touched by any foreign substance, the plates slowly close. Usually in plants of this order the anthers mature their pollen before the pistil has finished its growth. Pushing through with the plates closed, it is assumed that it prevents the deposition of its own pollen on the inner receptive surfaces. An insect visits the flower while the plates are expanded, depositing the foreign pollen, and the plates then close, giving the introduced pollen a chance to develop its tubes. This is the hypothesis. There seems, however, to be no record of any actual experiments or close observation on this point,—and there is yet a good opportunity for the student of plant-life to discover new laws. The peculiar behaviors of plants are often of service to the student in matters of. classification. Some botanists place the order of Trumpet-flowers, *Bignoniaceæ*, very close to the order of *Scrophulariaceæ*, in which *Mimulus* is placed. Some species of the former family have thin, irritable plates for the stigma just as *Mimulus* has, indicating that the close relationship botanists have supposed is correct.

These small points in the history of plants have often a bearing on the greater questions that stir mankind. In the case of our *Mimulus ringens*, it is very common in the eastern part of the North American continent, from Canada to Iowa and Western Texas. Then there is an immense region beyond the Mississippi in which it is absent. It appears again in the Kurline Islands, which are situated between Kamchatka and the larger islands in North Japan. Miguel records a *Mimulus Japonica* from Yezo, of which little is known, but which is believed to be also our plant. In whatever manner the present species may have originated, there seems little doubt that identical species had a common origin, and the appearance of the same thousands of miles apart from each other is to be taken as a proof that catyclisms have occurred producing immense changes on the earth's surface since these species first came into existence, and which have led to the absence of the plant over the great interval.

Our plant occupies an interesting place in the taxonomy of botany. It is among the earliest of North American plants brought to the attention of European botanists, being in the collection sent by Clayton to Gronovius from Virginia. It was thought then to be a *Rœllia*, and in a later edition is recorded as a *Lysimachia*, and its relation to *Gratiola* suggested. Plukenet figures and describes it as a *Euphrasia*, while Morison would have it to be a *Digitalis*. Under the reorganization of botany by Linnæus, it came to be *Mimulus*, where it yet stands. As already noted, Dr. John Mitchell, in the eighth volume of *Natura Curiosorum* proposed a number of plants of Eastern North America, adopted under Linnæan names, as really forming new genera. Of these Linnæus accepted a number as sound, but objected to a dozen or more of them, and among these the taking of our species of *Mimulus*, *M. ringens*, as the type of a new genus, *Cynorrhynchium*. Linnæus especially objects to this in a letter to Haller, under date of September 13, 1748, wherein he asserts that "it is certainly a *Mimulus*." But the time may be when this, and its related species, *Mimulus alatus*, will come to be regarded as distinct. Dr. Asa Gray, in the volume cited for the description, places the two in a distinct sub-section. Its general habit, its pinnately veined leaves so different from the almost parallel ribs of the western species, and other characters, would seem to form a valid distinction.

There are about seventy species, though but a few are in cultivation. *Mimulus moschatus* is the well-known Musk Plant.

EXPLANATION OF THE PLATE:—1. Lower section of flower-stalk of a plant from Eastern Pennsylvania. 2. Upper portion of the same. 3. Perfect flower.

Prepared by THOMAS MEEHAN.

them despite a strong sentiment in favor of the cotton boll as the official floral emblem of the State.'

I have little faith in the ordinary newspaper paragraph. I hope to be able to secure you seeds this season.

I noticed, this morning at breakfast, a singular effect of sunlight on flowers. We had gathered a bunch of lovely, purplish-blue, composite flowers, and placed them on the table. Just as we sat down, the sun came from under a cloud and shone directly upon them. Immediately the flowers began to open, and so rapidly that we could actually see the petals move.

The *singular* part, of course, was the rapidity with which the flowers responded to the influence of the sunlight.

I would have expected it to require more minutes than it did *seconds*.''

DIATOMS.—The name diatom is applied by scientific men to certain varieties of algæ or sea-weeds. We say ''sea-weeds,'' but they need not necessarily be at all maritime; a vast number of them live in fresh water.

As plants they are remarkable for their siliceous shells, called ''frustrules,'' and for the startling fact that, when living, they move about freely in the water, avoiding obstacles and acting like conscious animals. Indeed, they were for a long time so considered, though now, by general consent, given up to the botanist.

Their mode of reproduction closely imitates that of the desmids or chain-algæ, with which they are often associated. Their coverings, widely various in shape, often assume the most ornate and beautiful appearance.

If we visit a cathedral, palace, or temple, the highest evidence of man's structural art, we may perchance find something to offend. The builder has said: ''Here is a corner which need not be finished, or it may be completed in stucco. Who is going to pry into this recess, remote and dark, and difficult of approach, to discover an omission or a fraud? We may here either leave our work undone or do it incompletely.'' Nature, on the contrary, exhibits no such unfinished corners. The curves, lines and decorations are as perfect in the dark places as in the noon-tide glare. The minutest object is clothed in elegance. The diatom, often requiring the highest powers of the microscope to resolve, presents the most astounding accuracy and beauty.

Sometimes the ornaments of these tiny shells consist of striæ or closely parallel, fine lines, causing refraction of light; again, they will be marked by concentric circles resembling the so-called mill-turning on the cover of a watch. Other species will be dotted over or armed with projecting spines or tubercles, or there will be interlacing and intricate patterns made from circles or ellipses. All of them are exquisite. The architect, the designer of oriel windows, the chaser of silver or gold, the house decorator, might well resort to these little creatures for his patterns.

An interesting fact concerning them is, that their fossil remains exist in vast deposits, constituting the well-known Tripoli-powder used in polishing metals. The city of Richmond, Va., stands upon one of these stupendous heaps. We have some large deposits even within our own city limits.

From their unequaled beauty they have ever proved attractive objects of study, and, on account of their extremely minute sculptures and lines, they are useful test objects upon which to gauge the power and accuracy of microscope lenses.

Providence, R I W. WHITMAN BAILEY.

WINTER VACATION RESORTS.

Winter vacations have now become as popular with many persons as summer ones, and while a few may prefer to journey northward to witness King Winter in all his glory, the majority will prefer to go far south where they may bask in the warm winter sun and enjoy all out-door recreations by day, retiring to a welcome warm room at night. Of course, the almost complete change of scene from more northern surroundings to tropical or subtropical, is the main attraction, and makes in Southern California and Florida a Mecca for privileged pilgrims. Mexico, Jamaica, Cuba, and the new possessions of the United States also have charms for many and are increasing in popularity every year. To satisfy a general desire for information, news and notes about such places, MEEHANS' MONTHLY will devote space to that object in a few successive issues. The articles will be principally

relating to Florida, with which the editor is most familiar. Readers are invited to ask for special information and to contribute any original notes of general interest.

VEGETATION ALONG THE OCKLAWAHA RIVER, FLORIDA.—It must be confessed that Florida scenery in mid-winter is not particularly attractive as a whole,—but that does not sum it up nor should it impress seriously any one contemplating a visit to "The land of Flowers," other than to modify his expectations and lead to the location of really interesting features.

Through most of the southern Atlantic States, the traveler looks out from his car-window upon many desolate pictures of exhausted pine forests, the trees drawn of their sap for turpentine and resin—cut down for lumber—some partly burned and others fallen — posterity seems to have been forgotten. But they do not lack interest for the careful observer, and one may watch the gradual change in vegetation, most noticeably the addition of the Scrub or Saw Palm. It is the chief formation of Florida underbrush, and is seen thickly by acres in extent.

We must therefore look to special features to hold our interest, and one of the most important of these is a trip along the Ocklawaha River. This one hardly claims as beautiful scenery—it is rather odd and weird. Like certain people it has a personality that attracts and that makes it a trip never to be forgotten.

Perhaps most conspicuous in Ocklawaha vegetation is the great Bald or Deciduous Cypress, *Taxodium distichum*, the chief timber tree of that vicinity, which is being rapidly cut and converted into lumber for various purposes.

For the greater part along the river all the cypress timber large enough to be of value has been cut and removed, so to call the cypress the most conspicuous of the vegetation is perhaps to be understood in a different sense. There still remain old hollow trees, dead or nearly so and an abundance of young ones. The old sentinels of this forest are truly greybeards in appearance, draped as they are with long Spanish Moss, oftentimes many yards in length ; while at night, in the glare of torches on the boats, which are lit to show the tortuous river path, they are weird and more stately than ever.

Trees are removed from along the river in belts of about a mile wide on either side, the huge trunks being hauled to the water's edge by means of a heavy chain and steam power. Though a rough path is hewn, the hauling is attended by much crashing as the logs resistingly pass on to their doom.

The river reached, these logs are formed into

FIG. 1. A PINE RAFT ON THE OCKLAWAHA.

a long chain of rafts and carefully floated down to the St. John's River, from whence they are transported to local saw-mills. Fig. 1 pictures one of these rafts, and one will typify them all, for they are regulated in size by law, and specific rules are observed in relation to their guidance, that they may not prove dangerous to steamers. The illustration gives a correct idea of the average width of the river,—creek, many would term it,—and with the width of the raft it will be seen that difficulties might arise in guiding it safely. This particular raft may consist of pine, which is also extensively cut.

In removing the timber, it is not immedi-

ately cut down as many would naturally suppose, but the trees are first girdled, each woodsman cutting certain marks in the tree he so girdles by which he may later identify it. In about ten months after being girdled, the trees are practically lifeless and are removed. The reason for this procedure is, that trees freshly cut would be heavy with sap and would not float in the water.

The borders of the forest are variably swampy, sometimes miles in width Only occasionally are the banks slightly elevated above the river level, and at such places will usually be found a lonely landing where resin

FIG. 2. A LONELY LANDING ON THE OCKLAWAHA.

and turpentine chiefly are loaded on the little river steamers and shipped to the market. Our Fig. 2 is hardly typical of these little landings,—there is too much evidence of life. Seldom are there buildings of any description in sight. The tall trees by the buildings are cypress clothed in moss, as are also the majority of those in the background. To the extreme left of the picture the common enlargement of the cypress trunks at their bases is plainly seen in one tree. To the right are a few pine trees, which are abundant in some parts.

The distilling of turpentine and production of resin form one of the chief industries in Florida and other southern States, and visitors should not fail to explore one of the distilleries. The crudely made barrels containing resin may be seen in the rear of the building where they are waiting to be shipped.

The pines are limited to two or three species, *Pinus palustris*, the familiar Long-leaved Pine, being perhaps in greatest abundance. They grow tall and straight, as a rule, with very few branches, and these are bunched at the top. Thick trunks are rare.

At the time the photographs were taken, along the river banks were seen occasional Sweet Gums, Bay Trees and Swamp Maples. Brilliantly colored foliage, remnants of fall glory, brought the gum trees into prominence; while the maple in some cases had its spring display of red flowers and buds. There were, also, the livening green Cabbage Palmettos, *Sabal Palmetto*, very frequently interspersed—growing luxuriantly in the sandy soil, moist grounds or actually in swamps. This ability to thrive under such conditions was something of a surprise, yet exemplified the well-acknowledged fact that trees will frequently adapt themselves in time to existing conditions. A few of these pines are seen in Fig. 1, their long stems surmounted by the bunched leaves.

But the green of the palmetto was not alone in the color embellishments of the river's banks, the most charming, perhaps, being a profusion of large holly trees heavily laden with bright scarlet berries. These trees are popularly called Christmas-berries by the natives.

A species of ash also exists in these forests, but none were observed near the river.

The Wax Myrtle, *Myrica cerifera*, is abnudant along the banks, growing with rather more luxuriance than the writer has seen it in New Jersey wilds. In Florida, it frequently attains a height of thirty or forty feet. The Ocklawaha River is but a narrow stream. But it is wonderfully attractive to visitors,—not only in the wild vegetation that exists, but in

the manner in which it is displayed. Branches overhang the banks, scraping the sides of the passing steamer—not only one side but both in the narrower portions. It is difficult to imagine the narrowness and crookedness of this stream, but Fig 3 will aid in showing this. The little steamers are forever turning, first to one side then to the other, restlessly poking here and there close to the banks,—sometimes backing a little to make a sharp turn,—constantly wriggling like the rattlesnakes and moccasins occasionally seen swimming across the stream or stretched along a limb. There are many interesting facts to be told in connection with a trip along this river, both as regards the vegetation and animal life, some of which the writer hopes to present in future issues.

TEMPERATURE OF FLORIDA IN JANUARY.—Those who may be unfamiliar with Florida and the "Sunny South" will have different conceptions of the temperature. The first experience upon a visit there will cause surprise to every one. However, from frequent reports we must know there is sometimes frost, as early spring frosts occasionally injure vegetation.

In January, 1900, the writer found a chilly atmosphere in St. Augustine, — more especially at night, when a light overcoat was always a comfort. During the day, in bright sunlight, the perspiration is readily brought out. At the period mentioned, no actual frost had been previously experienced that season, but one morning the inhabitants awoke to find all the luxuriant banana plants frosted and withered. It was a pitiful sight; though as few plants are grown in that vicinity, it was hardly looked upon as any great loss.

As far down the eastern coast of Florida as popular Palm Beach, temperate weather is experienced, though the extreme of cold is not felt. There tropical vegetation has a chance for existence and the beautiful surroundings make the fact self-evident.

CALIFORNIA.—Visitors to California should bear in mind the extent of the State longitudinally, and that there is a wide range of temperature. As far north, however, as San Francisco, there is considerable warmth, and calla lilies and fuchsias may be seen out-of-doors growing luxuriantly. But one must keep well south to get the best effect in tropical vegetation. The section of which Los Angeles is in prominence, will be found the Mecca of winter tourists.

COCOANUT PALMS.—The cocoanut is one of the handsomest palms by its long, graceful leaves. It grows luxuriantly as far north as Palm Beach, Florida, and a few specimens may be seen a little above that point. Used to line walks, they present a picturesque scene, the low branches curving gracefully overhead. The nuts and their development are very interesting to observe. As a long time is occupied in the growth of the nuts, they may be seen on the same tree in many stages from small, acorn-like ones to the immense, brown-husked fellows, all in large bunches. The flowers, too, for a new crop, may be included in the collection.

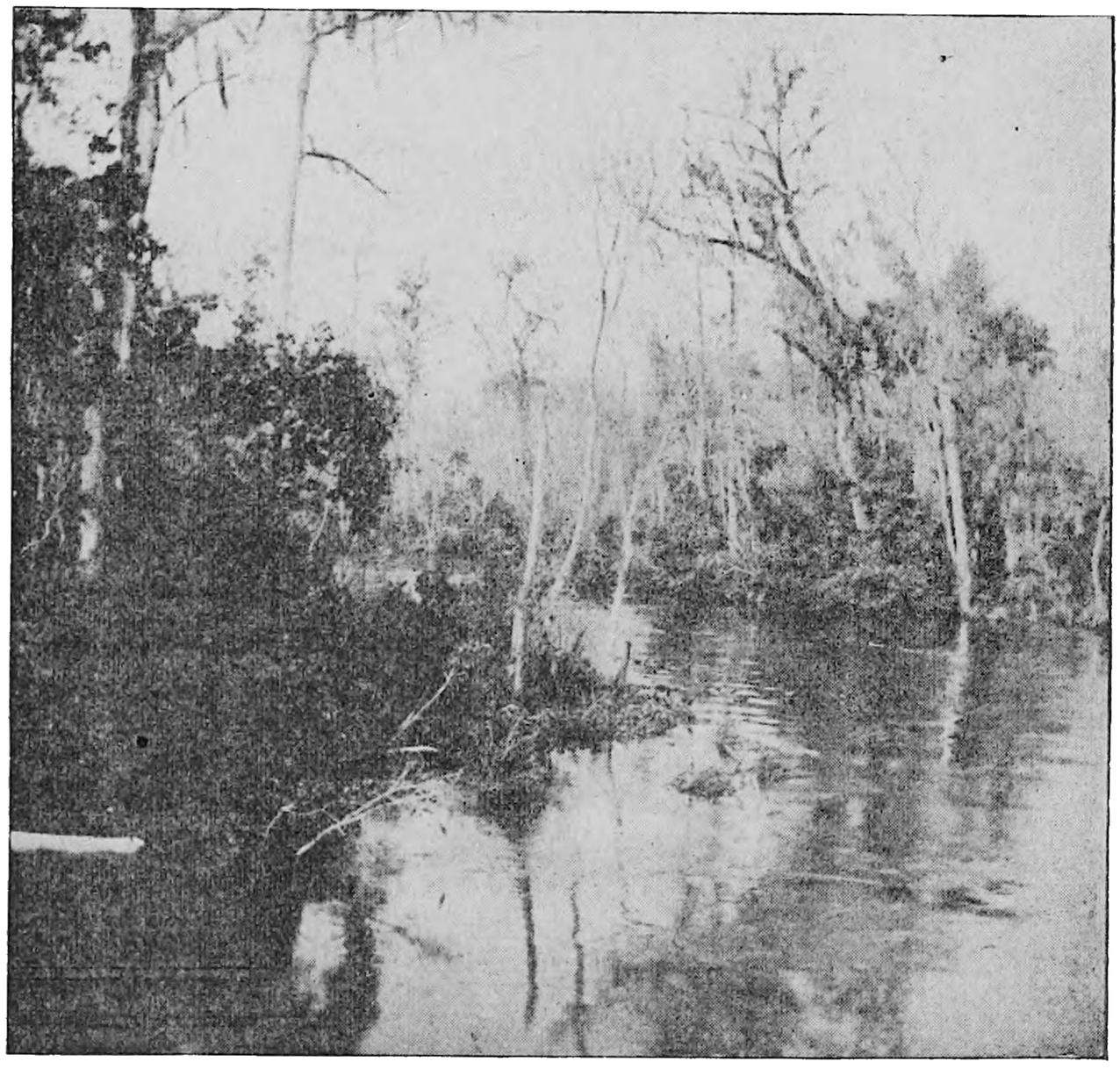


FIG. 3. THE NARROW, WINDING OCKLAWAHA.

It is a matter for concern that there appears to be little or no attempt to propagate cocoanuts in Florida, even though they be for ornamental purposes only. They are far from being so plentiful as they were fifteen years ago.

THE BANYAN TREE.

Branching so broad and long, that in the ground
The bending twigs take root, and daughters grow
About the mother tree, a pillar'd shade,
High over-arched, with echoing walks between.
There oft the Indian herdsman, shunning heat,
Shelters in cool, and tends his pasturing herds
At loopholes cut through thickest shade.

MILTON.

INJURY FROM SEVENTEEN-YEAR LOCUSTS.—This year, it is said, we may expect a visitation from destructive locusts, classed as the seventeen-year breed. Prof. J. B. Smith, of the N. J. Experiment Station, issued an alarm to tree-planters warning them not to plant this coming spring, but if so to avoid pruning very severely if at all.

At the commencement of the great San José scale scare, Prof. Smith took what many considered to be a well-judged stand in relation to the laws and methods that should be observed in dealing with it; but now many will also deplore that the same judgment was not exercised to moderate the alarm over the locusts.

No one, apparently, denies that these locusts will cause some destruction, but it is also understood that the ravages are almost within certain confines and not widespread. The borders of woods and old thickets are said to be the chief breeding and feeding places, and it is safe to say that but little planting is likely to occur very near the places of real danger. Certainly, within the writer's district, no serious harm was felt at the time of the last visit of the locusts, 17 years ago; or if it did it was so extremely insignificant as to have left no impression on any one's memory.

ARTISTIC AND NATURAL DEVELOPMENT OF PARKS.—The daily increasing interest in public parks is quite noticeable, and that there is room for deep study, forethought, and thorough work in connection therewith is plainly evident. To successfully organize and maintain a public park or park system requires a head or heads skilled in many departments. Lacking this, parks frequently become simply a lounging place for loafers, instead of a beautiful resting or recreation place for children and daily toilers of the city, who need the fresh air that open spaces afford. Small parks in a large city are to the masses what the oases are to a desert traveler.

In providing for parks, city authorities should look long ahead. The time for commencement is not after the density of population makes the need more imperative, though it is frequently necessary to make late provisions to cover earlier neglect; but rather, as the advance of improvements indicates the future growth of a city, by foresight should certain ground be set aside for use as expediency may suggest later.

In the hands of a competent landscape gardener and engineer, almost any piece of ground with more or less natural advantages for park purposes, yet possibly worthless for anything else, may be literally transformed into a most pleasing spot. The question of competency is a serious one, as is also the divorcement of park affairs from politics. Besides these two, progress is frequently interfered with by lack of sufficient financial appropriation by Councilmen not sufficiently appreciative of the material benefits a city derives from parks. When a city shows itself intelligently desirous of making permanent provision for the health and happiness of its people, there can be no better sign of its future prosperity.

After all, the choice of a suitable man to superintend the development of city parks is one of the most important considerations, for the mere provision of land to be devoted to public uses, and appropriations of money to further the project, are only foundations for great possibilities. The superintendent of an extensive park system must combine executive ability, a broad knowledge of horticulture and skill as a landscape artist. Furthermore, he

must either be an engineer or have such a man for a right-hand assistant. He must be a man who knows how to attract and please the public, and to throw open to view the many beautiful aspects of nature. Men with these qualifications are not plentiful,—or, at least, they have not yet advanced to public view. Doubtless with the progress being rapidly made in establishing new parks, the right men can be brought forward.

Considering that the chief development of parks in the truest sense has only been within recent years, the art may be considered largely in its infancy. Central Park, New York City, is considered the oldest one of its kind in the United States, and 1851 found Charles Downing, the pioneer of landscape art, appealing strongly for its establishment on a large scale. Dying a few years later, he was unable to see the happy results of the movement to which he lent his aid; but the extraordinary growth of the city makes the wisdom and benevolence of it evident to-day.

Central Park is a practical example of landscape art, for the "natural" features have been largely the result of development. Things are different with the new Bronx Park, a feature of which is had at once in the pretty little gorge and stream. Philadelphia's great Fairmount Park holds one of the most charming strips of nature in its Wissahickon Valley, through which a broad stream winds, lined by a beautiful drive-way and bridle-path miles in extent. A number of other American cities are taking in these choice pieces of nature, which form attractions the enjoyment and appreciation of which the public can never fail to realize. Minneapolis, Minnesota, is one of these favored cities, having her chief parks on the high banks of the Mississippi River, and containing the famous Minnehaha Falls. Not only in summer may pleasure be found in a well-located and carefully-developed park, but there are many winter aspects that may delight the lover of nature. The Falls of Niagara in winter presents a sight in its icy garb which attracts visitors from long distances; and in like manner, only on a smaller scale, the Minnehaha resembles the glistening walls of imaginary fairy-land. In fact, wherever a little

GROUP OF ELK, MINNEHAHA PARK.

Berry, superintendent of the Minneapolis Parks, we are enabled by a photograph to give our readers a peep at a group of elk gathered in Minnehaha Park. The picture speaks for itself, and hints at the interest these animals must awaken among the people who are given the opportunity of seeing them there in real life. Besides the elk, they have deer and one moose, numbering in all 29.

The extensive use of evergreens is deplored

is just sufficient to arouse wonder as to what view will present itself beyond. This photograph was taken in Elizabeth Park, Hartford, Conn., which is, by the way, one of a park system which does great credit to its superintendent, Mr. Theodore Wirth. According to a writer in *Park and Cemetery*, Mr. Wirth is one of the few men who have made the practical working of parks a life study, having decided when a boy to adopt that profession. His

new and untested; but we also recognize that what is possible educationally in European countries—and especially in connection with gardening subjects—is not necessarily so in the United States.

Innumerable difficulties would arise at the start and take years to overcome—perhaps never be adjusted with complete satisfaction. Among these would be the securing of competent instructors—and who would judge of their competency? With the changes in cultivation methods necessary in nearly every locality, according to local requirements of climatic and soil conditions, there could be no

BECHTEL'S DOUBLE-FLOWERING CRAB-APPLE.

text-books that might be considered standard. We do not say these things cannot be accomplished, and the difficulties overcome, but rather they must of necessity come slowly. The immediate or early expenditure of $1,000,000.00 for a purpose of this kind would be a waste of money and would not so well reveal the value of the system as would a slower procedure. Let a few test schools first be established in one or two country districts, that we may know exactly what to expect, and profit by mistakes and the knowledge of difficulties before making a great outlay and upsetting present established schools.—ED.]

CHESTNUT AND HICKORY GRAFTING.—The art of grafting may be quickly learned, but uniform success is difficult to obtain even with experience of long standing. Chestnut grafting is considered one of the most difficult operations, and the best hand is never completely successful. The hickory is perhaps quite as uncertain.

NEW OR RARE PLANTS.

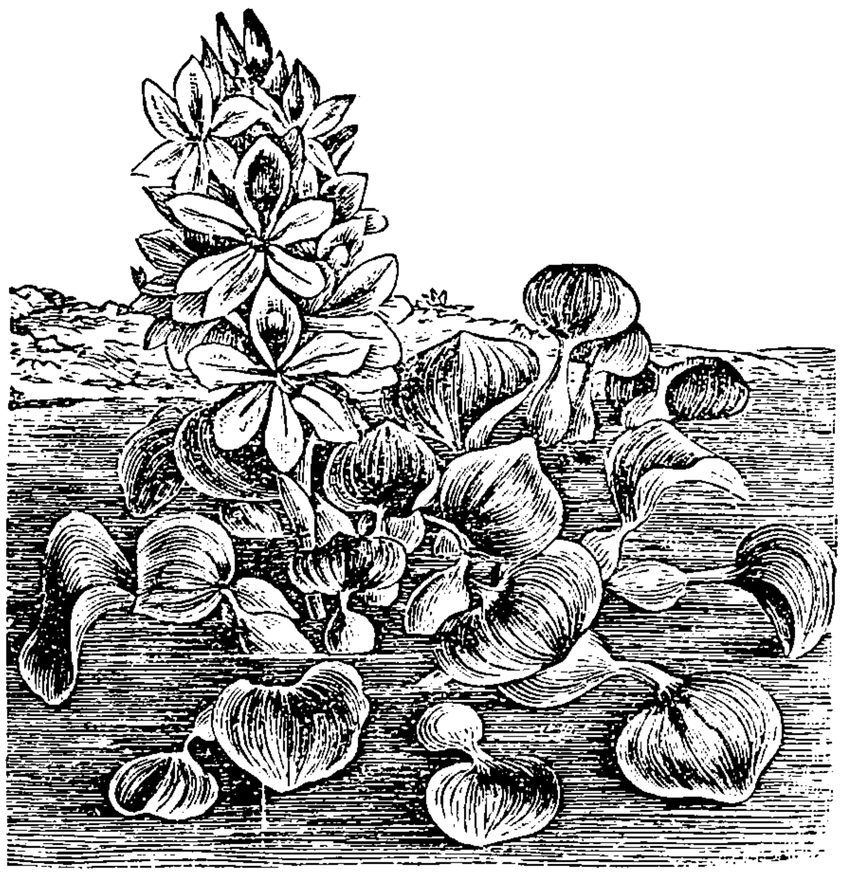
IMPROVED PETUNIAS.—The Petunia, though a rather common flower in some respects, has certain real merits that will keep it ever popular with many persons. Its field for favor has been widened by the origination of a new strain of "Star" and "Feathered" varieties. Prof. Maynard, of Amherst, Mass., says: "I am sure all lovers of the truly beautiful will welcome and use both of these new strains largely in the future in their ornamental work."

A. B. Howard, of Belchertown, Mass., is to be credited with the origination of these varieties.

PONTEDERIA CRASSIPES GRANDIFLORA.—The Water Hyacinth, as *Pontederia crassipes* is known in our gardens, is a favorite with cultivators of aquatics, though a sad pest in the lakes of Florida, where it is an escape from cultivation. *Lyon-Horticole* refers to an improved variety that has appeared in the Old World, and gives the account quoted:

"This new plant is a remarkable aquatic species, floating on the water by means of leather-like little bottles formed at the petioles by the closing of the leaves. The old variety was almost sterile, rarely flowering; the variety *floribunda*, on the contrary, flowers every year. *Pontederia crassipes* has large, beautiful, blue flowers on a smooth stem. It needs a temperate bed in winter. Our sketch gives a capital idea of this water plant."

This is an interesting plant to grow in a dwelling, as it will flourish in water without any particular attention.



PONTEDERIA CRASSIPES FLORIBUNDA.

FLOWERING APPLES.—There are but few flowering trees, small or large, that have more beautiful blossoms than certain of the commoner things, as cherries, apples, peaches and plums. What prettier sight is there than many of our orchards, the beautiful pink flowers of the peach,—the large, white, crimson-touched apple blossoms,—the graceful, drooping white cherries intermingled by budding green leaves?

Under cultivation solely for ornamental purposes are a number of handsome species and varieties, many with large, double flowers, and it is more particularly with these this article is concerned—*Pyrus coronaria*, *P. Malus floribunda* and varieties *Parkmanni*, *Toringo* and *spectabilis* are very popular.

A few years ago a magnificent large-flowering variety was introduced and named Bechtel's Double-flowering Crab, and this in many respects is the best of all, though it is difficult to justly compare it with the dainty *P. Parkmanni*.

Our illustration on preceding page, from the London *Gardener's Chronicle*, indicates the size and form of its flowers, though somewhat reduced. In nature they are white, prettily shaded with pink. They resemble small roses and like them do not last very long—the one great objection to all ornamental flowering fruit-trees.

When considering the location of these trees, it is but necessary to imagine a similarity of habit to that of the fruiting trees, though usually of much dwarfer habit. They flower in great profusion and may be used effectively singly or in masses and groups.

THE HARDY FLOWER GARDEN.

THE HARDY CLOTHILDE SOUPERT ROSE.—One of the most satisfactory of everblooming white roses of a hardy character is Clothilde Soupert. In the vicinity of Philadelphia, it requires no winter protection whatever. It commences to flower with other roses in June, and continues till freezing weather comes. In common with most all others of the everblooming class it flowers profusely towards the close of the season, as well as moderately from its commencement. Because of its many good qualities it is a popular rose for planting in cemeteries. There is now a climbing variety of this rose, which will be in great demand should it prove as hardy as the type. J.

DOUBLE PYRETHRUMS.—The single-flowered *Pyrethrum roseum* is a pretty thing and indispensable in hardy flower gardening; but the doubles make a finer display and are considered even more valuable. The double white Bridesmaid variety is a handsome form. Mr. Hunnick, gardener to Fred. W. Vanderbilt, Esq., Newport, R. I., uses them freely in the flower garden, along pathways, with great effect. To a considerable extent they resemble fine flowers of the white hardy Chrysanthemum, blooming before season. This resemblance is easily accounted for by the close relationship between *Pyrethrum* and *Chrysanthemum*.

A NEW GAILLARDIA GRANDIFLORA.—There is now but little doubt the new, compact form of the well-known perennial, *Gaillardia grandiflora*, is an improvement over the old form and is likely to supersede it. Improvements often take abnormal forms and we are inclined to fall back on the older types, fearing to go to extremes; but in this new plant, nothing of the old form is changed but the habit, which is noticeably neat and the flowers more erect. A good future is surely in store for it. The constant summer-blooming character insures

the Gaillardias popularity, and the compact form makes it available for almost any purpose, and especially for bordering.

ACONITES. — The best aconite for general gardening purposes is *Aconitum Napellus*. It makes a tall, leafy stem, at least three feet in height, at the summit of which is a somewhat compact spike of blue flowers. The flowers appear in fall, and in general appearance take the place of tall Delphiniums, which are closely related. This is the deadly poison aconite from which the extract is made for medicinal purposes. The entire plant, root and top, is used. *Aconitum uncinatum* has somewhat of a sprawling habit, and is less ornamental.

The so-called Winter Aconite is not an *Aconitum* but *Eranthis hyemalis*.

FRUITS AND VEGETABLES.

WHITEWASHING FRUIT TREES. — The old-time method of whitewashing the trunks of trees is not usually credited with its full value. Farmers follow it considerably, though perhaps more from a country habit than with a definite reason before them.

Our December issue recommended it for the purpose of cleansing trees of scale and other insects in connection with winter orchard work. Prof. W. T. Macoun, Horticulturist for the Canadian Department of Agriculture, adds that it is most efficient composed of sixty pounds of lime, twenty-four gallons of water and six gallons of skim milk, or those proportions. The milk makes the wash stick better, giving the lime more opportunity to exercise its caustic properties. A little glue is sometimes substituted for milk with the same results.

It will be found practicable to apply the whitewash by means of a spraying machine,—in fact, machines are now made for this special purpose, and can be utilized for any ordinary painting about the out-buildings.

Those who object to the conspicuous appearance of whitewash may add some sifted hard-wood ashes to the mixture to darken it.

It has been claimed that whitewash sprayed thickly so as to cover the buds of peach trees in late winter will protect the latter from danger from frost. This must be done, says Prof. Taft, when the buds are being encouraged to expand prematurely. It is not always profitable to the commercial orchardist, because of the labor attending it, but may be carried out by the owners of a few trees for home-fruiting purposes. Bordeaux mixture may be combined with it to aid in preventing fungus attacks.

WINTER ORCHARD CULTIVATION.—Another thought in relation to the desirability of orchard cultivation in winter, a subject discussed in our last two issues, is brought out by Prof. F. H. King, of the University of Wisconsin. It may be utilized to show that winter cultivation,—or, better, late fall, when the wood is well ripened and trees dormant,—while it does provoke less radiation of fresh heat, it also better retains the heat stored up in the soil the preceding summer months. Therefore, in losing at one point, there is a gain at another. In heavy soil, cultivation might induce retaining of excessive moisture, which would be detrimental in some respects; in light soil the gain in moisture would be appreciated for use the following summer.

It is evident there is much to be considered in relation to this subject, and especially that the general conditions of the soil must be well known.

WITLOOF CHICORY. — An illustration and description of Witloof Chicory were given in the December issue. The following cultural information is added from *American Gardening*: "In digging and preparing the roots, do not cut the top off like a carrot or parsnip. Twist the outer leaves off, leaving the centre intact. In storing lay it in rows with the heads out, covering the root with sand or earth. Follow up in tiers in regular rotation. Box up as required, bring into heat in some dark place or keep the top well covered, so that it will bleach out nice and white. Heat is preferable in forcing rather than a slow temperature. It makes it more brittle and tender, and as it is used almost exclusively for salads, tenderness and crispness are indispensable to make it good."

APPLE KING OF TOMPKINS COUNTY.—English apple-growers place this American variety among their leading kinds as an all-round variety for general excellence.

BIOGRAPHY AND LITERATURE.

PALMYRA.

Palmyra in the desert stands,
But sheltered from its burning sands
By wooded hills, upon whose sides
The tiger lurks, the leopard hides :
Far from the city they arise,
Which, underneath soft Syrian skies,
The "Diamond of the Desert" lies,
An island in a sea of sand.

MARY BAYARD CLARKE.

SAMUEL MILLER.—Horticulture parted with a great devotee in the death of Judge Samuel Miller, of Bluffton, Mo., who passed away on October 24, 1901, at the advanced age of 81. Of late years, Mr. Miller had given a great deal of attention to the improvement of our native persimmons, and had achieved some success with them ; but he will best be brought nearer to our readers as the originator of the Martha Grape, which, once prominent, has lately been covered by the popular Niagara. He was honored and esteemed by his fellow-men, in whose memory his enthusiasm for horticulture especially will long remain bright.

A TRIBUTE TO THOMAS MEEHAN, BOTANIST.

'Twas meet that thou, reluctant, shouldst not heed,
When from the fields Elysian came the call ;
Shouldst linger till the flowers fade and fall,
And only at their death, thy parting speed.
Rare lover of Nature (blossom, root, and seed),
Whose wooing won her beauty's richest store,
And coy confiding of her secret lore,
Thy requiem shall be the fullest meed
Of men,—the mournful chanting of the winds,—
The sighing of the sad, deserted trees.
Methinks in that fair Land that knows no night,
Thou wilt not seek thy joy in kindred minds,
But 'midst the asphodels, with pure delight,
Thou'lt roam alone the wide, immortal leas.

RACHEL FRANCES SHARPLESS.

Ogontz P. O., Pa.

THE CLOSE OF A BEAUTIFUL LIFE.—As the foliage of autumn trees is much more brilliant than in the summer, growing time, more varied and noticeable before "the fall of the leaf," so the radiance of a good life at its setting or declining sun, calls for deeper thought ; and as Professor Meehan beautifully remarked in the December number of the magazine :

"It is not until the tree has grown and its handsome proportions are in evidence before us, that we are curious to know something of the seed which bore it" — words all so true and beautiful, I cannot let them pass with once reading them. Then he goes on to speak of and honor the dear memory of those who have been useful and helpful to their day and generation, into whose companionship he has now entered, certainly in the effort to benefit humanity, and leave a record worthy of others to follow, enjoy, and commend in turn.

MRS. E. E. ORCUTT.

NEW OFFICERS OF THE PUTNAM COUNTY HORTICULTURAL SOCIETY.—A regular meeting of the Putnam County Horticultural Society was held January 4, 1902. The following officers were elected for the ensuing year : Mr. Wm. Church, president ; Mr. Wm. N. Benjamin, vice-president ; Mr. Frederick Ammerman, secretary ; Mr. J. G. Southard, treasurer. The Exhibition Committee reported financial success, with a balance of $60.00.

W. J. BUCKLEY.

FLORA OF TENNESSEE AND PHILOSOPHY OF BOTANY, by Augustin Gattinger, M. D. ; published through the Tennessee State Bureau of Agriculture.—This valuable work of nearly 300 pages, supported by the State of Tennessee, is ostensibly for distribution amongst citizens of that State ; but its contents are of such unusual character and of such wide-spread interest, it is to be hoped its dissemination will be broader. The "Flora" is a complete synopsis of Tennessee plants, not intended to assist in the determinations so much as to give an up-to-date catalogue and guide to locations. Where some description has been found desirable in a

few cases, it has been well given. We deplore the adoption of the new nomenclature, notwithstanding Dr. Gattinger's reasons as explained in the preface. MEEHANS' MONTHLY has from time to time fully recorded its views on this subject. It is safe to say that no amount of effort will be able to change the names so firmly established—our *Cystopteris*, recently illustrated, among them. The Index of Genera should have contained a list of the old names as well as new; no one but the apostles of the new nomenclature would think of picking out *Filix* as the generic name for the plants so well known as *Cystopteris*. The number of species listed is 2,218, of which the ones in cultivation and of officinal value are indicated by a chart. Dr. Gattinger has authority for the statement that "in the entire area of the United States no part in an equal territory possesses so great a diversity and complication of structure," botanically and geologically.. The area of middle Tennessee was an unexplored region, botanically, when the author first took up his residence there, and he claims the honor of being the pioneer in that field. Surely none could have been better fitted for thorough investigations in the lines followed. The book is evidence of the author's wide range of knowledge and thought and capacity for research. More than one-third the number of pages is devoted to the "Philosophy of Botany." The first chapter in this part, "An Epitome of the History and Philosophy of Botany," is an especially valuable contribution to literature. "Forestry" and "Modern Thoughts on the Origin, Evolution, and Significance of Life" are other important chapters. Dr. Gattinger's book is one of the best of the many excellent works, the outcome of a long, devoted, scientific life, now numbering 76 years.

GENERAL NOTES.

PLANS FOR FUTURE ISSUES.—The editor takes this opportunity to thank the many friends who have contributed to the future support of MEEHANS' MONTHLY by their kind words of encouragement. He is anxious to make the publication valuable to them, and to that end is always eager for suggestions that will lead to added interest. Questions asked will always have careful and considerate attention.

In the matter of illustrations, it is proposed to have several series of particular interest to persons who are anxious to know more about choice and rare trees and plants. The initial of one series is the Bechtel's Flowering Crab Apple in this issue. Following issues will picture beautiful flowering trees and occasional shrubs. A series of fine specimen evergreens will commence later, and for this and others we shall be glad to receive photographs or notes from the readers. The Winter Resort illustrations will continue for a few issues, changing continually in character and interest.

Many interesting and instructive articles are prepared and others are under way for the future, among them being several on practical landscape gardening. Mr. Richard Rothe, whose name has been made familiar to our readers, will contribute illustrated articles on this subject.

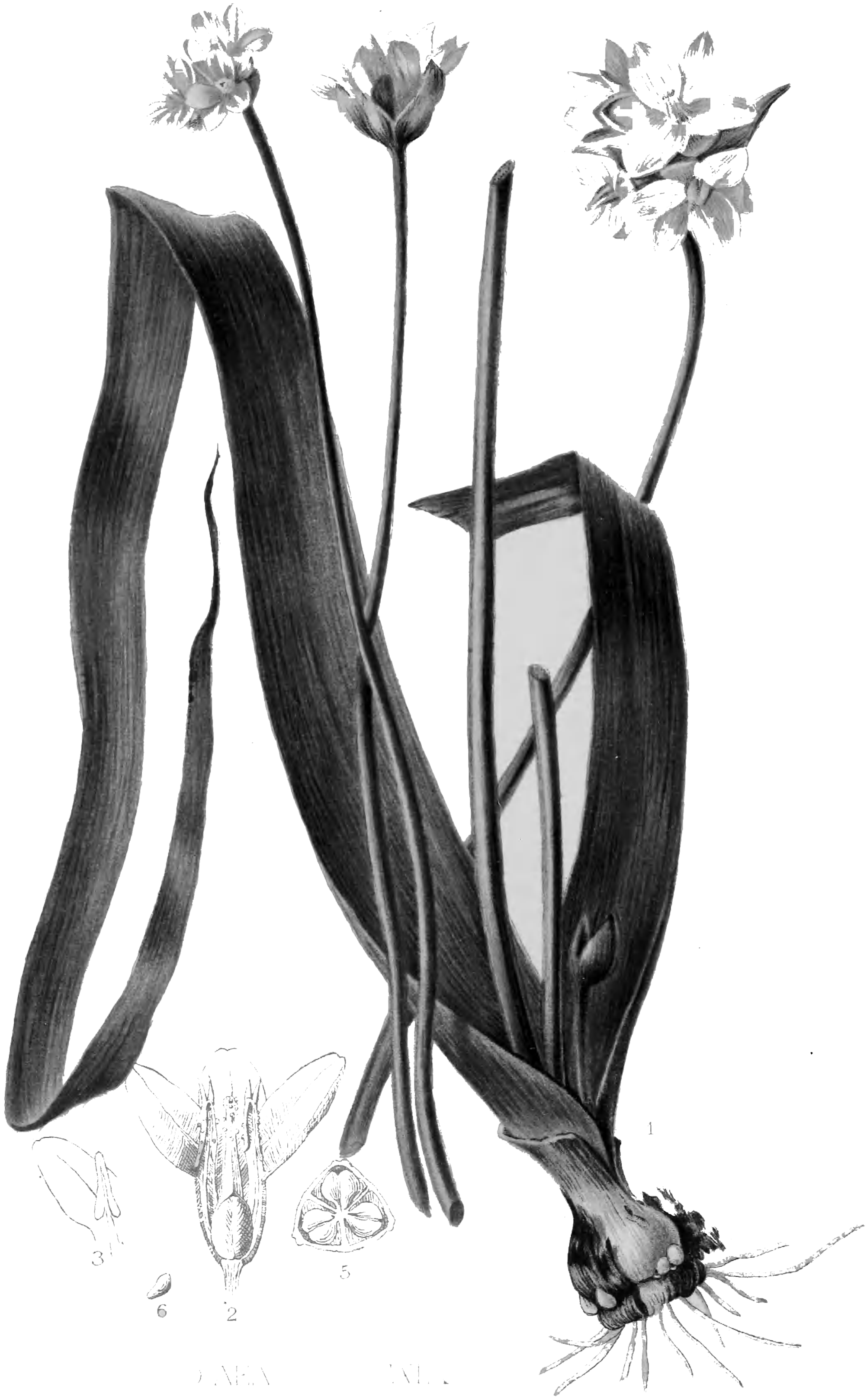
GERANIUMS FOR DYSENTERY.—From time immemorial Pelargoniums have been known amongst the Caffres and Zulus as a remedy for dysentery. It seems the natives simply nibbled the dried root of the plant. In English hospitals it is used in the form of a decoction: four ounces of the roots are boiled twenty minutes in a pint of milk. Two (tea?) spoonfuls of it are given to the patient every two hours. It seldom takes over 48 hours to effect a cure.

[The above is from *La Semaine Horticole*. A much simpler remedy for these temporary disturbances of the bowels is a couple of tablespoonfuls of pure cider vinegar.]

ELDERBERRY BUSH.—The plea for the beantiful Elderberry Bush, recently made in MEEHANS' MONTHLY, is well made. Familiarity too often breeds contempt, especially in floral matters. One of the most beautiful of pieces for Children's Day was a bell made entirely of these creamy white flowers, save the clapper, which was a bud of our native water lily, *Nymphæa tuberosa*.

The fruit, too, furnishes "pie-timber," which is a favorite with many. Lacking acidity in itself, it must have this supplied. Boiled cider or rhubarb are the most common attendants for this purpose.

BESSIE L. PUTNAM.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capitata, as originally referred by Bentham, who first described it from plants collected in Mexico, by Hartweg, in 1839. The original *Milla* was the species known as *Milla biflora*. It was among the earliest of the seeds of native plants collected in Mexico after its settlement by the Spaniards, and was raised in the Royal Gardens at Madrid, and named, as so many of the well-known Mexican plants were, by the celebrated Cavanilles. Julian Milla was the head gardener in the establishment, and was honored by the great botanist in this plant's name. A number of species since discovered have been referred to the genus, but have later been referred to others, *M. biflora* being the only one left to hand down to us the gardener's name. *Brodiæa* was separated by Sir James E. Smith, a celebrated British botanist of the early part of the past century. He named it in honor of James L. Brodie, a good Scotch botanist, who excelled particularly in the study of ferns and the lower orders of plants; it was not for the great physician of that name, as sometimes supposed. The plant as depicted in our illustration seems to differ considerably from the picture in the "Botanical Magazine," besides in the many long, grass-like leaves. The bulb is represented as whitish-green and ovoid, and the stem as solid instead of being a mass of hollow tubes as in ours. But so far as the bulb is concerned, the root has been cleared of its tunic, the proliferous bulblets, and the old parent bulb at the base. The differences are, therefore, chiefly by omissions rather than by any errors of fact. The ovarium is, however, represented as pentangular, while in our case it is triangular. This may be a constant varietal character, as the regular narrow leaves may be.

The variations have given rise to a number of genera established by some authors. These, though very trying to those who deal with systematic botany in the abstract, are very welcome to the close student of Nature as she presents herself in the living dress. In the present case, *Milla* is distinguished from *Brodiæa*, by having the upper portion of the corolla—or segments of the perianth as it would be called—wheel-shaped or rotate when expanded; while *Brodiæa*, as seen in our picture, Fig. 2, is always funnelform. These segments are also always longer than the tube. Then in *Milla* theic are six perfect antherifer-ous stamens; in *Brodiæa* there are but three, as in Fig. 3, and the other three are developed as mere membranes, as seen in the centre of the enlarged flower, Fig. 2. These membraneous expansions form a sort of crown in the mouth of the corolla-throat. In our species these are each one bifid or cleft,—and this again has been taken as the basis for a new genus by Kunth, and our plant would be described as *Dichelostema*, from this peculiar character. Indeed, in a "Sketch of the Natural Order *Liliaceæ*," as represented in the States of Oregon and California, at page 173, vol. for 1868, of the proceedings of the "Academy of Natural Sciences of Philadelphia," Professor Alphonso Wood records our plant as *Dichelostema capitata*. In other species of the original *Milla*, peculiarities have been noted and other genera founded on them; but they have been generally remanded to *Brodiæa* by the mass of systematists. The facts furnish a useful lesson to the student, that as to what should or should not be regarded as a genus is a mere matter of opinion. It does not follow that nature is not really arranged in genera, but that there may be ground for difference as to what should be regarded as dividing lines.

In the large collection of specimens examined by the author, the larger number, if not all, are from dry and desert localities. But the original, collected by Hartweg, was found in woods in the vicinity of Monterey. It seems a strange transition from the open to the shade. One might imagine the denizens of the wood giving the stranger a hearty welcome.

"——The merry vines
Go gadding in the brisk and spirited air,
That even calls from out the barren rocks
A welcoming smile"

and made the plants from the desert wastes feel as if they were at home.

A remarkable feature in the history of Liliaceous plants, of which our *Brodiæa* is a member, is their great abundance on the Pacific coast in comparison with their scarcity on the Atlantic slope. [See also page 43.—ED.]

EXPLANATION OF THE PLATE:—1. Complete plant from California. 2. Enlarged flower showing the awned staminodes attached to the petals, and pollen grains distributed over style and stigma. 3 Perfect stamen attached to sepal. 4. Head of flowers with staminodes forming a crown in the centre of the perianth, and covering the pistil. 5. Cross-section of ovary, slightly enlarged. 6. Pollen grain magnified 270 times.

Prepared by THOMAS MEEHAN.

WILD FLOWERS AND NATURE.

ADVANCING SPRING.

As yet the trembling year is unconfirm'd,
And Winter oft at eve resumes the breeze,
Chills the pale morn, and bids his driving sleets
Deform the day delightless; so that scarce
The bittern knows his time, with ingulft
To shake the sounding marsh; or from the shore
The plovers when to scatter o'er the heath,
And sing their wild notes to the listening waste.
THOMSON.

NOTES ON THE DELPHINIUM AND "ALCINOUS."—The article on the larkspur in your January number is very interesting and suggestive, but contains some misleading statements. For example, Dioscorides is quoted as a writer "before the time of Christ." While the date of this Greek author is not exactly known, there is good reason to believe he wrote about fifty years after the Christian era. And the quotation itself I do not find. His great medical treatise has two short chapters on *Delphinium*, which run as follows:

"*Delphinium* sends up from a single root stems two spans long, or even longer, about which grow leaves, divided, small and oblong. The flower is like *Leucoium*, purplish, dolphin-like, whence the plant has its name. The seed in pods resembles millet; and when drunk in wine is a most excellent remedy for those bitten by scorpions; and they say that scorpions also are paralyzed when the herb is put near them and they become inactive and torpid, but when it is taken away they revert to their normal condition. The plant grows in rocky and sunny places."

"There is also another *Delphinium* that resembles the foregoing, but has much more slender leaves and stems; it has the same virtue as the preceding, but in a less degree."

The title of the verses on page 6 speaks of the "Roman Alcinous." Is the writer confusing Alcinous, king of Scheria, who lived some centuries before Rome was founded, with Antinous, the favorite of the Roman emperor Hadrian?

L. H. ELWELL.

Amherst, Mass.

[The present Editor is glad to have pointed out any possible errors in the leading chapters or any part of the MONTHLY, though it may in some instances be impossible to investigate them, lacking knowledge of the immediate source of the author's information.

If, as Prof. Elwell admits, there is uncertainty of the actual period in which Dioscorides lived, there is also possibility that the author found some acceptable authority or fact to warrant his statement that he lived before the time of Christ. One work consulted by the Editor even reduces the date given by Prof. Elwell to "about the year 40." Notwithstanding, the author may have made the statement inadvertently.

The foregoing translation of Dioscorides' writings on the subject may be correct according to the translation consulted by Prof. Elwell; but there were several translators of the original of Dioscorides, and slight differences might be expected. Is it possible the contradictory translations as quoted may be thus accounted for?

According to Pope's translation of Homer, the Alcinous referred to was King of Phæacia. The Editor is unable to determine why the king should have been termed "Roman," unless he had some rather obscure connections or sympathies in that direction.

The comments for the sake of accuracy are appreciated, as will be any further that will throw light on the matters in dispute.—ED.]

DIATOMS.—The interesting article on diatoms by W. Whitman Bailey in the February MONTHLY brought to mind a very interesting experience that gave my egotism as a gardener a severe check. I had often been annoyed—and I am sure many others have—by a green scum forming on the surface of the soil in greenhouses kept at a high temperature. I asked one of the professors in charge of a near-by laboratory to allow me to examine it under a microscope, which he very willingly did. The sight was a revelation. It was like

looking into a dense forest of the carboniferous period, the long-jointed trunks of the oscillaria waving to and fro and the boat-shaped diatoms darting about in every direction, their beautiful green and amber tints constantly changing in the light with every movement,—all seemed activity and life, and quite a contrast to the rather unpleasant-looking slime. I never scraped it from the surface of a pot since, without thinking what I was destroying.

ERNEST HEMMING.

BIRDS IN THEIR OLD NESTING PLACES.—That birds do return to old spots is apparent in the case of a pair of robins which have nested in our yard for three or four consecutive years. The female is extremely pugnacious, fluttering into one's very face, scolding vehemently if we chance near her nesting place. The male makes almost as many threats, but he always takes a perch on a tree near by, just out of reach,—and, I may add, out of danger. At first he assumes a most threatening air. But when this fails he confesses that his maximum is reached. Not so with his mate, who descends to the lower limbs, bristling like a mad hen. And in one or two instances she has even flown against the bonnet of the offender. The demonstrations of this pair are so pronounced as to be readily recognized from year to year. They always build in a Norway Spruce, of which there are several side by side. But never have they twice chosen the same tree.

BESSIE L. PUTNAM.

EXTERMINATION OF MEDICINAL PLANTS.—The September number of the MONTHLY contained some notes on the extermination of many plants by professional root-diggers. It is not the hunters for medicinal plants alone who have to be feared. Those who desire pretty and rare plants for their gardens, and botanical students as well, have to be closely watched. A good plan to follow by those who know of a few rare, flowering plants which they wish preserved, is to go to where the plants grow early in spring, or before the opening of the flowers, and pinch off all flowering shoots. This preserves the plant, even though the flowers are missed. The writer has more than one rare plant in mind which has been preserved in this way.

C. M. L.

LUPINUS SUBCARNOSUS.—We feel fortunate in being able to supplement the recent remarks on the beautiful annual, Texan Blue-bonnet, as well as the picture of a single flowering plant, by the illustration that accompanies this note. If it be remembered that the flowers are of a delicate porcelain blue, the magnificent effect exhibited by a field such as our illustration depicts, can be imagined. It is not surprising Texans should consider it so favorably as to desire it for their State floral emblem. The photograph is reproduced through the courtesy of Prof. William L. Bray, University of Texas, Austin, an article of whose it accompanied in the *Botanical Gazette*.

A TEXAN PRAIRIE COVERED BY LUPINUS SUB-CARNOSUS.

See MEEHANS' MONTHLY, pages 3 and 23 of the current volume, for illustration of an individual plant and the accounts referred to.

WINTER VACATION RESORTS.

No one visits Florida without stopping at least a few days in the quaint old city of St. Augustine. To be sure, nearly all the fairly large towns along the east coast are visited for a brief period if there be time to spare them. The careful traveler procures a ticket from his own city right through to his furthest point in Florida,—say Miami, Palm Beach, or even Rockledge. With this, at reduced expense, he is permitted to stop over at any point on the eastern coast. But before all, the oldest American city is dearest to our hearts. St. Augustine has a charm almost indescribable,—and it is a curious mixture of the ancient and modern that makes it so. The horticulturally inclined will find plenty to interest them about the city, and it is this fact that leads the writer to touch briefly upon it.

As intimated in the February MONTHLY, the Florida mid-day sun is quite warm, and a little shade is grateful even in January. Among shade trees, the Water Oak probably predominates. It is rapid-growing, has a beautiful form and is almost entirely evergreen. In general appearance, it is not unlike the Willow Oak. The China Tree, *Melia Azederach*, is a common small tree for street and yard. It is generally distinguishable by its low, spreading, globular head — umbrella-shaped, many term it. This tree is distinctly deciduous, and surrounded in the early months by so many evergreen trees, its bare limbs do not seem to contain life. Of course, the Live Oak is used for shade, and grand old specimens line some of the streets, their branches overtopping and meeting. Draped with moss, they form an inviting retreat from the open and mostly noisier streets.

It will seem strange to class a palm amongst shade or street trees, because of its erect, rather slender growth, yet it is so considered and answers the purpose fairly well. Then it has advantages in being easily obtained from the wilds and transplanted at moderate cost and with ease. Fig. 1 shows a nice specimen used for the purpose, and shows how admirably suited is its form to the surroundings, architecturally. Like the erect-growing Lombardy Poplar, it serves certain purposes as few others could. The transplanting of palms generally takes place in May or June, when they are growing. No pains are taken to obtain roots, and trees from 15 to 25 feet in height will be successfully moved, the leaves being cut back to check evaporation. Stays are placed to support them till they root.

The tree bare of leaves to the left in Fig. 1 reveals the fact that even in this climate, which is more or less warm all year, the trees take a rest. But the visitor finds this difficult to realize at first. The church in the same picture

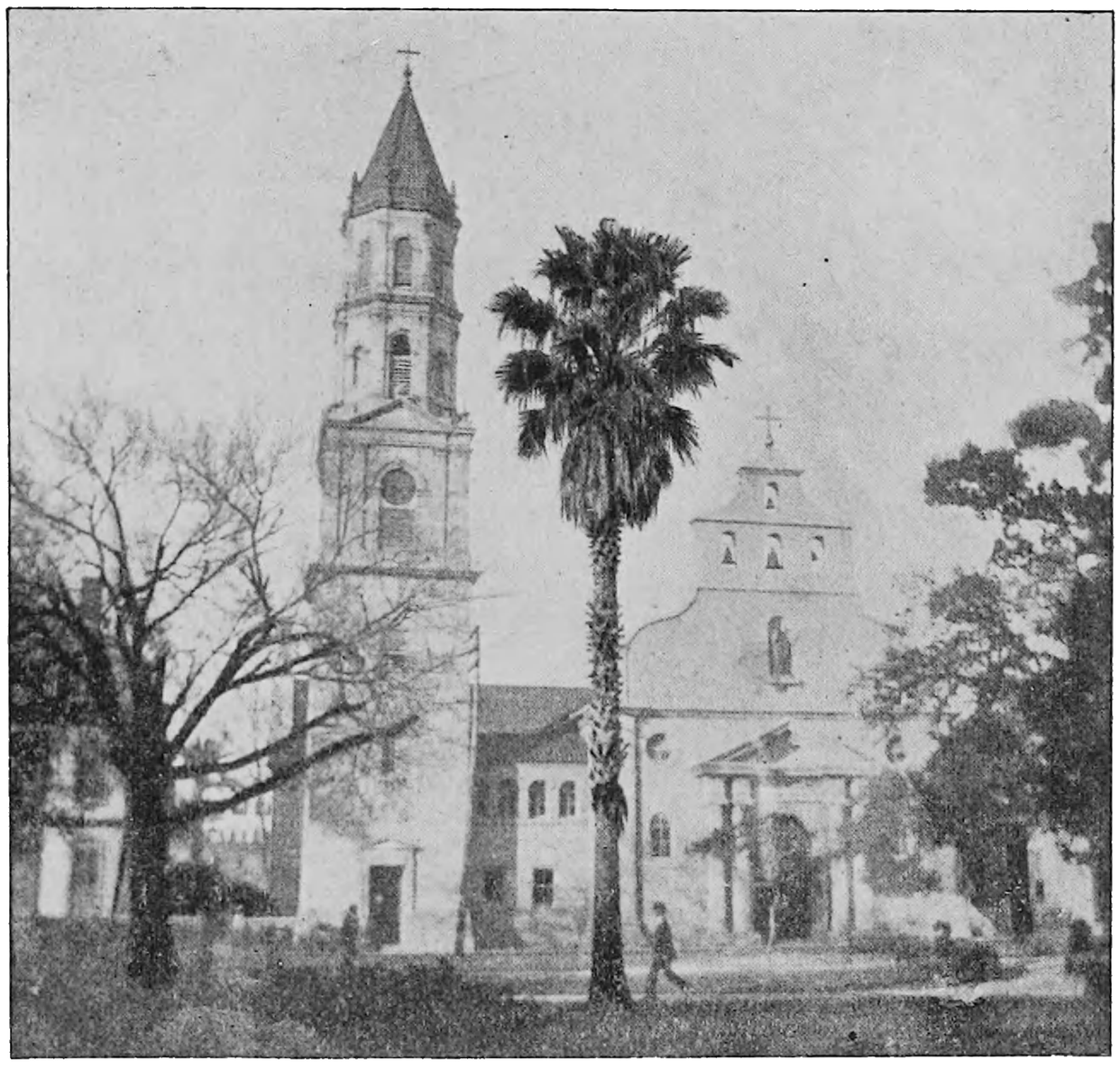


FIG. 1. A CABBAGE PALM. OLD R. C. CATHEDRAL, ST. AUGUSTINE.

is claimed to be the oldest extant; but that may be safely doubted. It was mostly destroyed by fire more than a decade ago, but was rebuilt. It stands facing a very pretty square which terminates at the old sea-wall and slave (?) market

On the same street, a little piece in the opposite direction, is the world-famous Hotel Ponce de Leon. Its grandeur has probably never been overstated as regards the interior; outside, the architectural beauty of the Spanish Renaissance is equally charming and befitting its situation in this old Spanish town.

The grounds surrounding the Ponce are in some respects run down or overgrown, though

the present gardener is getting it into condition again. On either side of the main entrance gate stands (or did stand in 1901) a Gum Tree, or *Eucalyptus*, one of the largest, rapid-growing trees known as found in its native home, Australia. The specimens noted were possibly 15 feet in height and very bushy—all one year's growth.

The lawn and gardens are fittingly laid out in an old style, and contain many interesting subjects. There are huge Chinese Arbor-vitæs,—a favorite in the South,—and fine old Cherokee roses forming an attractive arbor.

Opposite the Ponce, but separated by a small square, stands another hotel of the great

FIG. 2. AN ODD, BRANCHING PALM, DAYTONA, FLA.

Florida East Coast System, which is but little less grand—a term that may be generally applied to all the hotels of that system. But the square is at present our chief attraction. It is laid out in a formal manner, nicely kept, and divided by numerous walks.

Along the streets are fine, conspicuous trees that should have their full share of comment. The Evergreen Magnolia, *grandiflora*,—or *M. fœtida*, as some now call it,—is perhaps the best of all, with its large, glossy green leaves. The leaves on some individual trees have a deep russet on their under surface. No tree has a richer appearance in southern scenes, wild or cultivated. There are also a Bay Tree of some kind, the Camphor Tree, hollies and the variegated and green-leaved Pittosporums. The latter is a superb, large, evergreen shrub and is hardy as far north as North Carolina. In the wilds of Florida, and about St. Augustine in abundance, the Spanish Bayonet Yucca is prominent. It is a trunk-producing species, bearing a stalk of handsome flowers in April or May.

A considerable portion of the present city of St. Augustine stands upon reclaimed ground, originally a wet waste. No trace of it is now to be seen. Thirteen years ago the vicinity boasted a fine orange grove, which the writer well remembers visiting. The trees were then loaded and bent with the weight of golden fruit. The first disastrous "freeze," some years ago, changed all this, and there are now no signs of an orchard,—nothing but a few petted trees in various yards. At night they are protected from possible frosts by means of a night-cap-like canvas, giving a martial appearance to the lots.

Leaving St. Augustine, we will very briefly stop at Daytona, a picturesque town not far below the former place, just to look at a natural curiosity in the shape of a three-branched Cabbage Palm. In Fig. 2 will be seen a small, simple-stemmed palm and the branched one referred to. During all the writer's travels through Florida, not another such tree was seen. The Live Oak in the background is one of many such trees in Daytona, and they make the town one of the prettiest along the eastern coast.

The Screw-pine, *Pandanus*, is closely allied to palms, but it is always capable of branching, as will be seen in Fig. 3. The photograph from which the plate was made was taken in the gardens of the Hotel Royal Poinciana, at Palm Beach. This is the first real bright garden spot reached by the visitor going southerly through the State. Its charm differs from that of the Ancient City in being more tropical in its every surrounding. Flowers and rare plants, cocoanut trees and huge oleanders abound everywhere. Veritable jungles exist teeming with interest for the lover of the

purely natural ;—but these all form a story of their own which may have utterance at some future time.

THE KUMQUAT.—Visitors to Florida or similar far-southern points should secure a plant or two of the Japanese Kumquat for their conservatories. This plant is a dwarf member of the Citrus family, and abundantly produces small "oranges," in shape and size much resembling silk-worm cocoons, but a trifle larger and more nearly round. The fruit, though slightly acid when first bit into, has a rather pleasant taste. It is excellent for preserving.

CENTURY PLANT BLOOMING. — It is seldom a northerner has the privilege of seeing the odd-looking flower-stalk of the Century Plant, unless he has visited some of the more tropical localities, where they are frequent. The flower-stalk rises to a height of about fifteen feet, the flowers at the top.

FRUITING PERIOD OF PINEAPPLES.—The fruit of pineapples do not commence to form much before the month of February in Florida, and it takes several months for them to mature. They are grown in the State mentioned very extensively.

FRUITS AND FLOWERS OF JAMAICA.—Those who have visited Jamaica are loud in praise of its floral beauty and the abundance of its tropical fruit and vegetation. Governed by the English, it offers every opportunity to the visitor to enjoy its natural beauties and inspect its industries.

MEXICO.—"A land of white sunshine, redolent with flowers; a land of gay costumes, crumbling churches, and old convents; a land of kindly greeting, of extreme courtesy, of open, broad hospitality,"—such is the encomium bestowed by a great traveler writing of Mexico. After all, what land is devoid of special attractions where nature has sway of her artistic powers and the high arts of man are made to join harmoniously in every production.

ADDITIONAL NOTES ON BRODIÆA.—In addition to what has been said of *Brodiæa* and related plants, it may be noted that the Liliaceous plants of Japan are numerous, though there are few identical or nearly so across the Pacific in Japan. The species of the order are somewhat numerous in the Asiatic flora. The true lilies are represented by numerous species in Japan, as they are in Eastern Atlantic States, as well as in California, and one might well expect to find some of the coincidences of similar species in the two widely divergent regions, as we do in other cases.

FIG. 3. A LARGE SCREW-PINE, PANDANUS UTILIS.

The three membraneous phyllodes or false stamens in *Brodiæa*, as against the six perfect ones in *Milla*, will also interest the student in plant life. That element in the doctrine of natural selection, that plants have taken on various forms in response to adaptation to conditions of usefulness to the plant, will cause reflection as to the value to the species of three false stamens in the one case against the six perfect ones in the other. It may be an arrangement to secure self-fertilization, for the membranes press over the stigma, and the pollen from the perfect stamens is scattered over it. How can either condition be of any superior advantage in the economy of plant life?—T. M.

CLEMATIS AND IVY ON MT. HELICON.

Here is a ruin,—once a temple, now [pile
Fallen, shapeless, and o'ergrown,—a mingled
Of blocks and broken pillars, fretted ceilings
And sculptured friezes, moulded cornices,
And wreaths and garlands, heaped confusedly,
And veiled with clematis and ivy, where
Under their verduous tufts, the lizard works,
And serpents cast their coats, or in the sun
Lie basking in their burnished mail, and roll
Their fascinating eyes. PERCIVAL.

ORNAMENTAL SOLITAIRES* IN LANDSCAPE GARDENING.—When designing and executing the work of moulding more extensive grounds, after the modern landscape gardener has passed the stage of the general distribution of light and shade,—that is, the outlining of wooded sections as shade, and the open (the lawn) as light,—the employment of solitaires as parts of the special ornamentation becomes an important question. To follow the broad lines of nature, he will place them as sentries, irregularly along the curved lines of densely wooded sections; here for the purpose of forming deep recesses,—there, perhaps, for the sake of veiling or interrupting monotonous parts. In the framing of sceneries in parks, and even in their very composition, still more does the solitaire often play an important rôle. Only a thorough knowledge of the habit of trees, the condition under which they thrive, a wide foresight and an artistic eye, can avoid blunders frequently made in placing trees.

The ornamental solitaire requires, first of all, ample space for its full development. When more advanced in age, its characteristic contours will become conspicuous, and we look for harmony and proper contrast with the background and eventually near-by associates. To plant a dark Purple Beech, or a compact, robust Norway Maple in front of a sombre, rigid-looking pine grove, would hardly have the desired effect; while, in this instance, the light, graceful birch, or willow, not only breaks the rigidness, but also forms a happy contrast. The study of the characteristics of trees, the determination of congenial forms, and the different effects in grouping various contours is a science no landscape gardener can enter too deeply into.

It is with sincere regret that I say, the average American garden and park show far too often lack of proper consideration and care for the ornamental solitaire. Especially in suburban gardens, where space limits only permit the employment of a few trees and these trees should in time constitute the main ornaments of the grounds, they appear anything except naturally beautiful. The fact that frequently the owner of a new home desires shade near the house at once, leads (or rather misleads) him into the planting of large trees. While in some locations and under exceptionably favorable circumstances this procedure may prove a success, in by far the most cases it has disappointment in its train. Considering that the selection of varieties in this instance is always extremely limited, and keeping in mind that young, vigorous trees, when properly planted in well prepared soil, within the brief time of four to five years outgrow those shifted at an advanced age, the conviction that patience is here a well-paying virtue is easily conceivable. Likewise is the advice of a thoroughly competent landscape gardener, at all events, the best safeguard against future chagrin and deceit. The work is of far-reaching consequences and blunders appear usually at a time when to correct them causes not only greater expenses, but also disturbance, when one ought to be about to enjoy beauty.

If all is done well so far, it depends there-

[* Mr. Rothe has employed an uncommon term in connection with his article which may be better for explanation. Reference is made to "solitaires," corresponding to what are generally called "specimen trees." This application of a word, usually made to a single precious stone or gem, seems rather appropriate for a perfectly-formed, solitary plant in a landscape setting, and might well receive general adoption.

This opportunity is taken to further announce another illustrated article from Mr. Rothe's pen on a landscape gardening subject; it is expected to be in readiness for the next issue, and will deal principally with the landscape surroundings of dwellings.—ED.]

evergreens, a number of their fairest representatives natives of our country. Is it not far more charming to see their wide-stretching, virid limbs lashing the earth, while the grim, northeast wind sighs in their tops, instead of having the resin slowly oozing out of wounds for years, made so by imprudent cutting of their lower branches?

The accompanying illustration, a park scene, shows to some degree the effect of solitaires when grown in their natural state. At a considerable distance back in the centre is seen a magnificent specimen of *Fagus sylvatica*, var. *pendula* that is claimed to be the largest on the European continent. The writer saw it in 1893, in Klein Flottbeck, Germany, on the grounds of Villa Roosen. Its present dimensions, as given by Herrn Willhoeft, the head gardener, are: Total height, 16 metres; circumference of trunk 50 centimetres above ground, 2 metres, 18 centimetres; circumference of crown at the base, 51 metres. The tree was planted in 1835.

While some of our public parks and large private places now compare favorably with the best European creations, we can nevertheless not omit the fact that, at present, our work in this line, in its essentials, bears still the stamp of "to-day and yesterday." It will, therefore, rest with our park commissioners and superintendents, as well as our landscape gardeners, wealthy country residents and their gardeners, to make it their highest ambition to enrich our landscape sceneries with the fairest and noblest forms of trees. Our Creator has bestowed to us forests with the richest arborescence on earth; our parks and home grounds should bear every evidence of it, and should, in time, in wealth of variety and natural beauty, become the leading in the world. RICHARD ROTHE.

Lavelock, Pa.

EFFECT OF LIGHT UPON PLANTS.—A gentleman asked me some time ago why a privet hedge he planted under some trees did not grow. I told him the cause was insufficient light.

A good lawn or a good hedge in a dense shade is impossible. The shrubs and the grasses require the sunlight which the leaves of the trees intercept. Light is a prime necessity to plant life, and lawn grasses and shrubs are no exceptions to this rule.

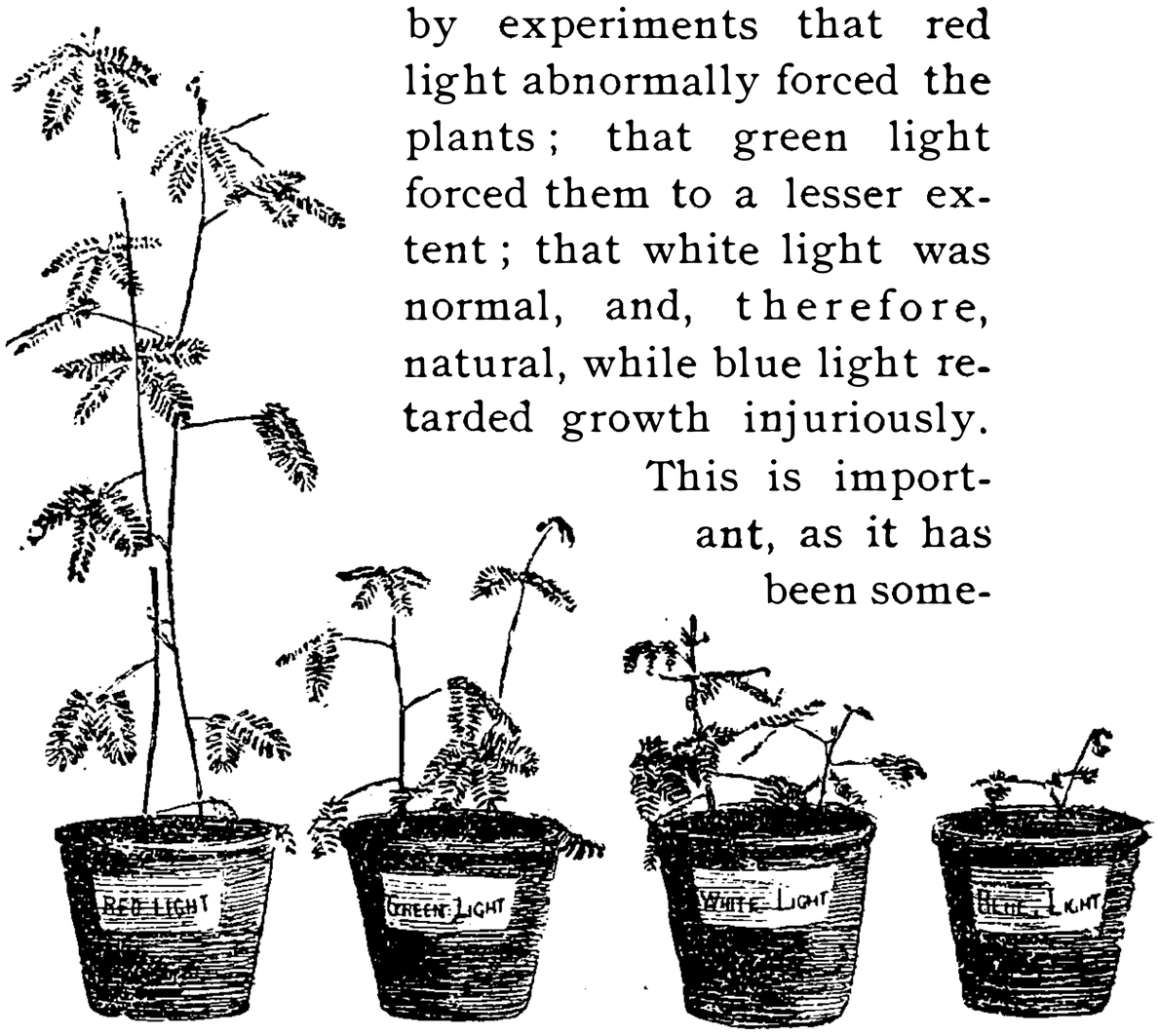
Vegetable pathologists tell us that it is only through the action of the sun's rays on their leaves that plants can perform their functions properly. Plants deprived of light, like factory children, look sickly.

Some classes of plants require less light than others. Ferns, for instance, are generally thought to be shade-loving plants; yet it is not the light so much they dislike as the hot and arid surroundings that are the general accompaniments of full exposure to the sunlight. The florists now grow successfully the "Boston Fern," *Nephrolepis exaltata Bostoniensis*, exposed to full sunlight in their greenhouses. And it attains a sturdiness and vigor never seen in shade-grown plants.

Orchid collectors tell us that in high altitudes in the tropics Odontoglossums and other cool orchids stand a considerable amount of direct sunlight. Yet in our greenhouses they need shading the greater part of the year.

In their natural habitats the free circulation of air around the plants enables them to bear more light than when surrounded by a crystal roof. Bad glass in our greenhouses makes shading a necessary evil. If there ever be glass made that will exclude the "heat rays" of the sunbeams and transmit the "light rays," the cultivation of plants in greenhouses will be immensely simplified.

According to a French scientist, M. Camille Flammarion, none other than white material should be used for shading plants. He found by experiments that red light abnormally forced the plants; that green light forced them to a lesser extent; that white light was normal, and, therefore, natural, while blue light retarded growth injuriously. This is important, as it has been some-



EFFECT OF LIGHT UPON PLANTS.

times the custom to use colored glass in greenhouses, and also to paint the glass various colors in shading them.

Buffalo, N. Y. WM. FITZWILLIAM.

[The reasoning and facts noted by Mr. Fitzwilliam are correct, but there is another factor that should never be forgotten when it is desired to establish plants beneath other trees. Besides contending with reduced light, there is the reduced state of fertility of the soil occasioned by the network of roots belonging to the over-shadowing trees. A slight shadiness with abundant air circulation will rarely be objectionable, but rather produce a mellow light that is devoid of the heat Mr. Fitzwilliam points out is often detrimental.—ED.]

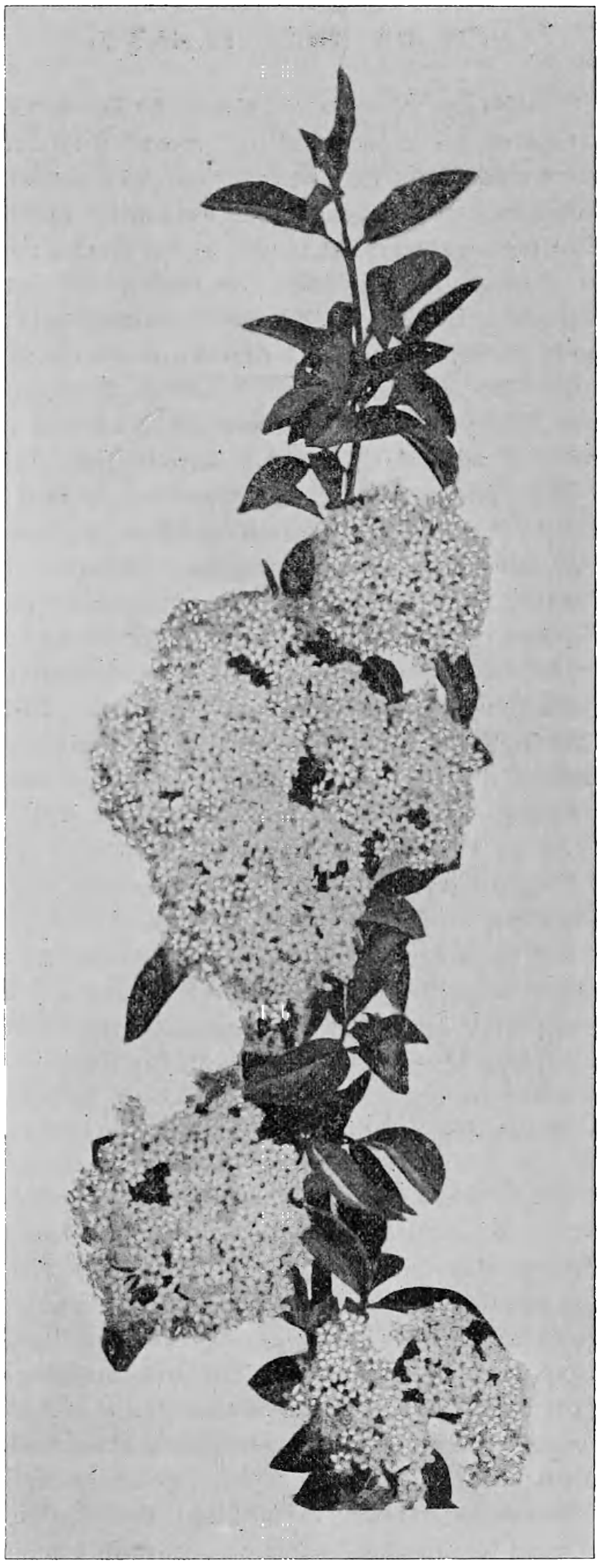
GROWING POLYPODIUM INCANUM.—In the April *Fern Bulletin* I notice a note speaking of the difficulty experienced in attempts to grow *Polypodium incanum*. While I am not yet prepared to say I have succeeded in doing this, I can say that I have a plant, taken from the woods nearly two years ago, and fastened on the trunk of a low-growing plum tree, which is still alive and in apparently good condition, and which the past summer put out a number of new fronds.

I have taken the liberty to send you in a separate package some roots of the fern, and in this connection beg leave to suggest that while the atmosphere of a conservatory is usually moist, it may be desirable to subject the fern at intervals to a long continued spraying of a day or more, thus treating it as nature does in the heavy rains.

That the fern does not object to the light, even the direct sunlight, is shown by a very flourishing patch growing here on the north face of the roof of an old hip-roof house, where it gets the sun all summer mornings and evenings. I also know one or two other patches on the trunks of trees growing in the open.

Portsmouth, Va. ELLIS B. NOYES.

VIBURNUM PRUNIFOLIUM.—Wolves and other undesirable creatures are so generally expected in humble sheep's clothing, it is no uncommon thing to miss something especially worthy, if it be not brought very openly to view. This is just the result in connection with the Sheepberry, *Viburnum prunifolium*. A plant of this, given opportunity to display its good form and showy flowers, would be a revelation to many persons. The accompanying illustration, from the *Garten-Zeitung*, shows the profusion of its



VIBURNUM PRUNIFOLIUM.

attractive white flower-heads, which appear in early spring. These are followed by ornamental black berries in the fall. The foliage may be a little larger than pictured, and is of

a dark-green color. The growth is that of a large shrub, rather than of a small tree. It is valuable as a hedge plant.

NEW OR RARE PLANTS.

THE BARBERTON DAISY, GERBERA JAMESONI.—One of the most startling recent introductions made from Europe last year was *Gerbera Jamesoni*. Its propagation evidently baffled European growers, as it was by no means new to them; but by good fortune it fell into American hands and has been propagated to such extent its general dissemination is certain. Mr. A. Herrington, Madison, N. J., and Mr. Henry A. Dreer, Philadelphia, should be credited with its successful introduction here.

The plant is of South African origin and is said to be of easiest possible culture, succeeding admirably and flowering continuously throughout the entire year,—in summer when planted out in an open, sunny border and in winter in a sunny position in conservatory or greenhouse. The flowers are daisy-like, fully four inches across, and are bright orange-red and scarlet to deep vermilion. It is a very striking color always admired.

CHIMONANTHUS FRAGRANS. *Chimonanthus fragrans*, or *C. præcox*, as it is sometimes called by reason of its very early flowering, is a rare Japanese plant Its flowers are unique and pretty and deserve more attention from rare-plant lovers. A correspondent asks if it is hardy in Ohio. Nothing has been recorded to the contrary.

CALLICARPA AMERICANA.—The beautiful plate of the French Mulberry, *Callicarpa Americana*, which appeared in the MONTHLY last autumn, leads me to enquire whether any successful efforts have been made to cultivate this shrub in the north. The one common in gardens is *Callicarpa purpurea;* and it is much prized for its lovely violet-purple berries in the autumn.

Nurserymen tell us it is difficult to sell plants of it in the spring to those unacquainted with it. Like very many of the *Verbenaceæ*, to which it belongs, it is of a half-shrubby character, the shoots dying back one-half or more in winter, and the dead portion impresses a would-be purchaser unfavorably. But cut it down almost to the ground, and a beautiful shrub will result, which will be a grand sight when autumn comes.

As already suggested, many shrubs in the same natural order behave in the same way. There come to mind the *Vitex agnus-castus* and *Caryopteris Mastacanthus*, both in the same order, and both behaving as the *Callicarpa* does, and requiring the same treatment. Prune all well in spring, and these shrubs will disappoint no one. J. M.

THE HARDY FLOWER GARDEN.

THE SATISFACTORY ASTERS.—Asters are among the most charming showy flowers in the herbaceous perennial class. The ones referred to are mostly native field asters, and must not be confused with the well-known China Asters. As seen in a large mass, they are most effective, and, contrary to what results with most other plants, fading flowers do not mar the general appearance. The blooming period is extensive and yields satisfaction to the last.

ARRANGEMENT OF AZALEA AMŒNA PLANTS.—Good judgment should be exercised in the use of the *Azalea amœna*. Its flowers will completely cover the plant with a dazzling brilliancy that in such a dwarf, compact plant has a heavy effect which does not always harmonize with its surroundings. Planted singly amongst other shrubs it will usually please the eye at all times; but *en masse* it should be carefully located. Grouped by themselves they are all right, or used as a low hedge or border.

ENGLISH PRIMROSES.—No flower holds the same place in the affections of the people of the British Isles as does the common primrose, *Primula vulgaris*. It is so closely associated with the country life that it would be hard to find a person who does not know what it is. One of the first flowers to open in spring, it is largely used to decorate the churches at Easter. One of the pleasant recollections of my life is of the time I used to go gathering primroses from the hedge-rows and woods for Easter decorations.

About twenty years ago, a political party endeavored to identify the flower with their

platform, and formed the Primrose League, but the plant was much too pretty and national to be claimed by one party, and the selection has evidently failed to fulfil the purpose.

Rather different from the English sparrow, and some other "institutions," it does not make itself entirely at home in America; but as a garden plant it is well worthy of a little attention.

The greatest drawbacks to its welfare in this climate are the hot summers and severe winters, the former being the worst; but if planted where it can get a little shade and moisture in summer, and a slight protection of leaves or other material in winter, it will well repay for the extra care. It is hardly necessary to speak of the color, as it has given its name to that shade of pale yellow; but there are many garden hybrids of different colors, ranging through all shades of blue and purple, that are very pretty and sweetly scented. The cowslip, *Primula veris* and *P. officinalis*, names it is variously known under, is very much like the primrose in habit and general appearance; but the individual flowers are deeper yellow and smaller, with several borne on one stem, forming an umbel, while the true primrose has only one flower on a stem. ERNEST HEMMING.

FRUITS AND VEGETABLES.

CHICORY.—The reference to chicory in the December number leads me to say that this, the *Cichorium Intybus*, is quite common in the suburbs of Philadelphia. Where once it gets a foothold in a waste spot, it increases quickly from seed. I have in mind a place of about an acre, in which it is very abundant. As a flowering plant, it is not to be despised. The flower-stalks reach a height of two to three feet, and, as the flowers are blue and of good size, when the plants are in bloom the waste places mentioned are much beautified. Occasionally a plant bears white flowers. But to see these flowers expanded, one must not look for them at noonday nor at any time when the sun is high. Early in the morning or on a cloudy day is the only time to see them unclosed.

But it is of its use as a vegetable that I wish to speak principally. The young leaves are eagerly sought for by Italians in our midst. Every morning, in season, these industrious persons are scanning the waste places for the young tops, with knife in hand and a large bag to hold their finds, in the same way that they gather together dandelion tops earlier in the season. Dandelion tops can sometimes be had in market, but I have not heard of those of chicory being for sale, so presume the tops are disposed of at home or to those of their own class. G.

IRRIGATED FRUIT TREES.—The quality of fruit from irrigated trees is the subject of an article in MEEHANS' MONTHLY for last November, page 174. I think no old-time cider-drinker or apple-eater in New England ever doubted that the land upon which the fruit grew had much to do with the quality of the cider and apples. Our dry lands are very generally sandy, and the apples grown on such are smaller, dryer, and, I think, more highly flavored than those grown on wet lands. Cider from apples grown on closely-set trees on moist land is thin, watery, and poor, while that made from the smaller, wide-apart trees of the dry lands is thicker and better flavored. Trees on the dry lands are practically farther apart than on moist lands, though set at the same distance, because they are smaller. Good fruit requires much sunshine when growing. The apples from a well-drained and well-fertilized and pruned orchard, on good land, were far better than those on poor, unfertilized, moist, sandy land. The feed will effect the product more or less both in the plant and animal kingdoms. An apple-tree stood on fairly moist land and bore late, large, and decidedly sour fruit. Another stood on a very poor sand-knoll and bore a small, miserable and very early apple. I grafted both the same day to Porter scions from the same tree. The early tree on the poor sand-knoll produced small, miserable Porters, ripening some two weeks before those on the other tree; while this other tree grew large, fair, and good fruit, but to me it always tasted a little sour for Porters. Root crops are greatly influenced by soil. I have never found good potatoes grown on moist clays. Makers of maple and beet sugars and of wine know the effects of soil upon product and the dairymen of feed on butter. J. D. LYMAN.

Exeter, N. H.

FRUIT NOTES.—At the recent annual meeting of the Pennsylvania State Horticultural Association, at Bloomsburg, Pa., the Editor gleaned a number of thoughts and facts that may interest the readers, and which are thus briefly told :

Prof. J. B. Smith, New Jersey Experiment Station, has made a thorough, practical study of the San José scale, its habits and the methods for its eradication. His discourse on the subject, covering its complete history and his experience, was clear and helpful. The scale has natural enemies, among them species of lady-bird, which, if given time and encouragement, will hold the dreaded insect in check ; meanwhile treatment properly carried out may be made effective and save infested trees. What is known as the "lime, salt, and sulphur wash" has accomplished eradication on the Pacific Coast, but because of climatic differences, it has but little power in the East. During the winter months the visible scale which covers the insect is small and very black ; it is always perfectly round and like a very low cone rising to a tiny point in the centre. These details are better observed by aid of a pocket lens.

The common breeding period is about the middle of June in New Jersey, but this main brood reproduces at once, and breeding is more or less continuous. One female will give birth to from 4 to 20 per day. In a month, one pair may be credited with a family of 1,000,000,000. It is this enormous rapidity of increase, so silently progressing, that makes their presence alarming. Peaches seem to suffer most, and will die in three years if not treated. The plum will closely follow the peach ; apples and pears are more resistant. A caustic or a penetrating oil will kill them without fail, and it is only the difficulty in reaching them and danger to the tree in making certain applications, that prevent speedy eradication. The "lime, salt, and sulphur" is caustic, but seldom remains on the tree long enough because of dampness at nights. Whale oil soap is effective, but is liable to injure peach buds. Crude petroleum is the best all-round remedy, if applied at any time during winter. The best oil prepared for the purpose alone should be used. The finest nozzle should be used on the pump for spraying. It will spread evenly and without waste. Crude oil in summer injures the leaves. Kerosene emulsion carefully made to suit the kind of tree may be used in summer. As generally seen, the insect is covered by a scale, but the larva is without covering, and may be detected slowly moving along the stems when the breeding period is at its height. Then is the very best time to spray effectively. The insects move so slowly there is little or no danger of their going from one plant to another by their own action ; but they are spread by other means, such as by birds, or in some cases possibly by the wind. The scale likes young growth and may usually be found in quantities at the junction of one and two year old wood. Before spraying, if considerable of the wood be pruned away and burned, the labor will be decreased. When a twig is cut and its life checked, the scale dies for lack of sustenance. By this fact no danger of spreading by means of cut branches exists.

Mr. Herbert W. Collingwood, editor of *The Rural New Yorker*, spoke interestingly of the marketing and consumption of apples in New York City. It chiefly took the form of a berating of the Ben Davis apple, because of its poor quality. Most of his hearers evidently upheld his views, while amused at his persistency of attack. This variety is responsible, he said, for but little appreciation by New Yorkers for the "King of Fruits." Some of his hearers, while agreeing with his denunciation made reasonable by the average Ben Davis, held to the possibility of good quality in some few locations. Mr. C. acknowledged the quality good in Illinois, Missouri, and Denver, Colorado.

Mr. John G. Rush, West Willow, Pa., a successful apple orchardist, gave excellent reasons for the good results he obtained in his advice to prune heavily in fall, aiming to keep the branches of the trees well distributed and apart, which permits of good air circulation. The latter, he stated, gives fine foliage and a good color to the fruit. He also mulches heavily in the fall or winter. Thorough cultivation makes healthy, vigorous trees less subject to ills and evil effects of insect depredations. He uses a great amount of kainit for fertilizing, it giving the appearance of being especially suitable for the soil of his orchard.

Further "gleanings" will follow in future issues.

HOPE.

It was a dream of Hope; I know the hue
Of her fresh mantle and her symbol true,
The leaf! She cannot give the flower or fruit,
But sends their promise by a herald mute;
The leaf that comes like one in haste to bring
The first of all some gladsome welcoming,
And cannot speak for joy, but with the hand
Still points and beckons to the coming band.

DORA GREENWELL.

A FLORA OF NORTHWEST AMERICA, by Thomas Howell, Willamette, Oregon.—Part 5 of this work of 87 pages, containing the orders *Boraginaceæ*, *Convolvulaceæ*, *Solanaceæ*, *Scrophulariaceæ*, *Orobanchaceæ*, *Lentibulariaceæ*, *Labiatæ*, *Verbenaceæ* and *Plantaginaceæ*, is now ready for delivery. Price, 50 cents.

PLANT LIFE OF ALABAMA, by Dr. Chas. Mohr. Published by U. S. Department of Agriculture, Division of Botany, as vol. VI, Contributions from the U. S. National Herbarium. An account of the distribution, modes of association, and adaptations of the flora of Alabama, together with a systematic catalogue of the plants growing in the State.

Dr. Mohr's great work, "Plant Life of Alabama," comes to the public with a touch of sadness when it is known that this completion of nearly forty years' observation and investigation was preceded several weeks by his death, which occurred in the fall of 1901. By completion, reference is merely made to the finishing by the printer and binder,—the work itself had left the author's hands complete in the widest sense.

This book is a worthy monument to the perpetual memory of this venerable gentleman, and it is one of great magnitude. Its 900 pages form an exhaustive work of inestimable value.

The systematic catalogue of plants naturally occupies the greater portion of the book, and it covers everything of the lower orders—slime molds, algæ, fungi, lichens, etc.—as well as the higher. Plants in cultivation for any purpose and not indigenous are also separately catalogued. The new and much-confusing nomenclature is used, but its undesirable effects are reduced by the new and old names being indexed.

The dissemination of Dr. Mohr's work is at present limited by the quantity printed.

ASPARAGUS; ITS CULTURE FOR HOME USE AND FOR MARKET, by F. M. Hexamer. Published by Orange Judd Co., N. Y.

"Asparagus" is unquestionably a needed and valuable treatise. To many, the culture of Asparagus may seem an ordinary thing and such a work be unnecessary, but this little book is so exhaustive and comprehensive new thoughts are presented to the reader that cannot fail to improve his methods of culture. Besides the natural treatment of the sub-divisions of the subject, such as the varieties grown, the soil and preparation, planting, cultivating, fertilizing, etc., there are chapters of special interest on forcing, preserving and culture in different localities. The last named chapter renders the work available for growers in all parts of our variable country.

"CAMERA SHOTS AT BIG GAME."—Amateur photographers, interested especially in photographing things of nature, and others who may delight in illustrations and interesting descriptions of animals in their native haunts, will be glad to hear the announcement of a work entitled "Camera Shots at Big Game." It is a large octavo volume with over a hundred pages in type, and with twenty full-page photogravures and many half-tones reproducing the author's unique photographs. Price $10.00. The author is A. G. Wallihan; publishers, Doubleday, Page & Co., N. Y.

A SOUVENIR OF PLYMOUTH (MASS.) PARKS.—A very beautiful souvenir of the Plymouth (Mass.) Parks has come to the Editor's desk with the compliments of Mr. Nathaniel Morton, Chairman of the Park Commissioners. It is

composed almost entirely of beautiful half-tone illustrations which picture many magnificent natural effects. A brief history of the parks is also given. Mr. Morton is the father of these parks, and for his public zeal in their cause was made and still remains Chairman of the Commission since it was established in 1899.

SEEDS OF COMMERCIAL SALTBUSHES.—The great value of the saltbushes (*Atriplex*) as forage plants for the alkaline soils of the West has brought them prominently into notice. That the public may be better able to identify species desired, a government bulletin (No. 27) has been issued in relation thereto. It is well illustrated and complete in its descriptions.

PROBLEMS AND POSSIBILITIES OF SYSTEMATIC BOTANY is the title of an address delivered by Dr. Benjamin Lincoln Robinson, the retiring President of the Botanical Society of America, at its seventh annual meeting, in Denver, Colorado, August 28, 1901. It is reprinted in pamphlet form from *Science*.

BOTANICAL APPOINTMENTS. — Dr. W. R. Shaw has been appointed botanist of the Oklahoma Experiment Station.

At the University of Wisconsin, Charles E. Allen has been appointed instructor in botany, and Messrs. Geo. J. Ruger and H. A. Winkenwerder assistants in botany.—*Botanical Gazette.*

SARGENT'S SILVA OF NORTH AMERICA.—Houghton, Mifflin & Co. announce that Sargent's "Silva of North America" is to be supplemented by two additional volumes, containing 115 plates. The volumes will be published in 1902.

PROF. W. WHITMAN BAILEY.—The friends of Prof. William Whitman Bailey, of Providence, R. I., will be pleased to know that he has been elected President of the Rhode Island Horticultural Society. The readers of MEEHANS' MONTHLY will recognize in him an able and frequent contributor to the columns of this magazine.

A GENERAL MEETING OF THE AMERICAN PHILOSOPHICAL SOCIETY. — The old and esteemed American Philosophical Society has decided to hold a large general meeting annually, hereafter, and has arranged the first to be held in Philadelphia, the seat of the society, in Easter week of the current year. This society was founded by Franklin in 1743, and has for its object the promotion of useful knowledge. Its regular meetings are held semi-monthly.

GENERAL NOTES.

CHINA TREE.—In many parts of the United States, *Sapindus marginatus* is called China Tree.

C. W. G.

DOUBLE RUE ANEMONE.—A number of years ago a member of our family found some beautiful specimens of double Rue Anemone for two or three consecutive years; but the roots were evidently finally exterminated by some means, or reverted to the normal form.

BESSIE L. PUTNAM.

OREGON'S CENTENNIAL EXPOSITION.—Oregonians are already preparing for a great Centennial Exposition in 1905, celebrating the anniversary of the expedition of Lewis and Clark, which was carried to the mouth of the Columbia River in 1805, and is considered responsible for the acquisition of Oregon Territory. This same expedition was of great botanical importance, and the commemoration should be made significant to the devotees of that science. The State has a wonderful wealth of forest, and its agricultural and horticultural possibilities should have great prominence in the celebration.

AGRICULTURE AT THE LOUISIANA PURCHASE EXPOSITION.—During the past few years, expositions have become so numerous as to make the idea almost a waning interest with many persons. Originality and ingenuity are taxed to their utmost. The St. Louis Exposition in 1903 will make a special feature of its agricultural division, and from the magnitude and diversity of plans, it should be made markedly fresh and interesting. The United States is a country intensely agricultural in the pursuits of its citizens, and rural in their habits. What, therefore, could be more fitting for great prominence? The Agricultural Building will be a huge structure covering an area of 32 acres.

GENTIANA ANGUSTIFOLIA

NARROW-LEAVED GENTIAN.

NATURAL ORDER, GENTIANACEÆ

GENTIANA ANGUSTIFOLIA, Michaux.—Stem low, smooth, one-flowered; leaves linear, fleshy; calyx lobes linear, erect half as long as the corolla; corolla large, bright blue, the lobes ovate, twice as long as the broad-toothed appendages—varies with the corolla, green without and white within. Stem four to ten inches high. Corolla two inches long. (Chapman's *Flora of the Southern United States*. See also Wood's *Class-book of Botany*. Gray's *Manual of the Botany of the Northern United States*, and Gray's *Synoptical Flora of North America*.)

This Gentian does not seem to have been well known to the older botanists. Thomas Walter, who, in 1788, published a *Flora Caroliniana*, refers to it under the name of *Gentiana purpurea*. But Linnæus had given that name to a European species. When in 1803 Michaux described the "Flora of North America," it appeared as *Gentiana angustifolia*, the name it still bears. The leaves are much longer and narrower in proportion to their length than others known to Michaux at that time. *Angustifolia*, signifying narrow-leaved, suggested itself as an appropriate name for it. As it is not common enough to have a popular name, the course adopted by authors of giving a translation of the botanical name is followed here. Since Michaux's time, however, other narrow-leaved gentians have been discovered, so that the proposed popular name is no longer characteristic, and will not probably be permanently adopted.

It is not a common plant, and this is probably the first time it has been figured. It is found sparingly in New Jersey, and from there extends to Florida. It crosses the Mississippi into Missouri, which is its western limit. Authors vary little in their experiences of its location and time of flowering.

Dr. Asa Gray gives it "Low Pine Barrens." Michaux found it in "meadows in lower Carolina." Pursh locates it "in meadows and near rivers in sandy soil." Darby states that it grows in "wet places." Wood finds it in "sandy fields." Willis, in his catalogue of the Flora of New Jersey, 1874, says that it is very rare in that State, and is found in "damp soil," and Britton, in his list of New Jersey plants, describes it as "Sparingly from Pine Barren regions." The specimen illustrated was gathered in New Jersey, in the "Pine Barren regions,"—but in an open, grassy meadow. Its companion plants were Solidagos, Asters, Polygalas, grasses, sedges and ferns,—the whole making as beautiful an autumnal picture as any lover of nature could desire. This was in the end of September. Further south it seems to bloom later, and to be almost a spring plant. Darby gives its season as October and November, and Chapman as November and December. Pursh notes that it is sometimes as early as August, but no locality is given, though he refers to it as northwards of Carolina.

The description is taken from Chapman as being in most respects characteristic of the distinctions as compared with the few other species found in the regions where it grows. Still it is not wholly descriptive of the plant as it may be occasionally found. As will be noted in the picture, it is occasionally more than one-flowered,—or at least the stem may be said to be occasionally branched, with a solitary flower on each branch. The appendages—meaning the crowned fringe in the sinuses—are scarcely as long as one would judge from the description. This fringe in the base of the sinus serves to divide the American gentians. There are many which have none, though instead they may have fringed edges to the lobes of the corolla. The former constitute the section *Pneumonanthe*, to which Gray assigns twenty-two North American species. The latter are *Gentianella*, which are represented by fifteen. The well-known Fringed Gentian belongs to the last named section. The *Gentiana Pneumonanthe*,

which gives the name to the section, is known as "Autumn Bell" in the "Folk Lore" of England. The beautifully dotted corolla is not referred to. Of this Dr. Gray says: "Calyx-lobes resembling the uppermost narrow leaves, longer than the tube; corolla two inches long, deep and brilliant azure blue, somewhat brown-dotted within."

The fair proportions of the flower, with its beautiful tint of shaded blue, claim for it universal admiration. The art critic would probably contend that in other respects nature had violated all the rules. There is no harmony of lines or proportions between foliage and flowers; and if the task had been a human one, the heavy-looking flowers would be pronounced by the critic too great a weight for such slender stems to bear. It must, however, be said, in palliation of this violation of the rules of art, that in nature the flowers do not look as heavy as art here represents them. It is, indeed, remarkable that blue flowers rarely have a heavy look when growing on the plants, no matter what may be their size, —and a blue flower of any kind rarely fails to receive general admiration.

"How could I know, O tender woodland treasure,
With petals blue, and soft as summer skies,
That from the dust of long-forgotten pleasure,
So dear a hope, so fair a dream, could rise?

Meek, lonely blossom, hiding in the shadows,
And waved by mountain breezes cool and free,
No fairer flower from summer's golden meadows
Could bring the thoughts that thou hast borne to me!

From the sweet stillness of the misty mountains,
Where fairies weave a strange, mysterious spell,
The cooling winds that blow from hidden fountains
Bore thee 'mid alien bowers and scenes to dwell!

Ah, sweeter on thy petals, fair and broken,
Than winds that blow across a summer sea,
Or strains of fairy music, is that token,
O wondrous flower, that thou hast brought to me!"

There is, indeed, little doubt but that the original home of the gentian family is in the "misty mountains,"—and that at least the parents of our lowland species, "hiding in the shadows" of grass or trees so differently from the exposure-loving ones all alpine travelers dream about, were borne by the "cooling winds" of past ages in these "alien bowers and scenes to dwell."

There is not much in literary, economic or classic history connected with our species but what is common to the whole genus.

Only three species of Gentian inhabit ancient Greece, and these have no common names, being found in the mountains only. Hence we find nothing in ancient story as we do of so many other flowers named in the olden time.

Its history seems to go back only to 169 before Christ, when the King of Illyria tempted the Romans to make war on his people, who defeated him, took him in triumph to Rome, and annexed his kingdom to their empire. He, Gentius by name, was their last king. His army is said to have suffered badly from malarial fever, as well as from their Roman enemies. He had them treated with an infusion of the gentian of that district, probably *Gentiana lutea*, and, it is said, with excellent tonic effects. From this Gentius, it is said, the name *Gentiana* comes. The plants of the whole family have a somewhat bitterish taste, but it is not believed in these days that the qualities Gentius fancied he found in the plant have any more tonic property than any other bitter herb would have. At any rate, *Cinchona* has replaced all these once famous plants as an antidote for malarial troubles. Up to recent times, however, the bitter gentians were used in some countries in the place of hops.

In common with many gentians, this species does not seem to take well to cultivation. It is said in the various dictionaries of gardening, to have been introduced to English gardens in 1812,—but it is scarcely, if ever, seen there now. It is classed in these works as an annual, and, indeed, the roots, as seen in our drawing, have little of a permanent look with them. Still, it is probably a perennial plant,—or at least a biennial one. Possibly if pains were taken to introduce special conditions to suit its peculiarities, it might be successfully grown. A pot of moss and sand, plunged half its depth in a wet place, often succeeds with these plants, when they fail elsewhere.

Prepared by THOMAS MEEHAN.

A SPRING GUST.

This roar of storm, this sky so gray and lowering
Invite the airs of Spring,
A warmer sunshine over fields of flowering,
The bluebird's song and wing.

Closely behind, the Gulf's warm breezes follow
This northern hurricane,
And, borne thereon, the bobolink and swallow
Shall visit us again.

And in green wood-paths, in the kine-fed pasture,
And by the whispering rills,
Shall flowers repeat the lesson of the Master,
Taught on his Syrian hills. WHITTIER.

OUR NOBLE HEATHS.—While true heaths are so very uncommon in the United States as to fall under the suspicion of not being at all indigenous, various related members of the family are frequently met with, and indeed assume truly noble proportions. We will speak of some of these mainly in their chronological order.

First among them in point of time then, and, some would even say, in order of beauty, comes the *Epigæa*, Mayflower or Trailing Arbutus. Indeed, it shows its relationship in the shape of its corolla.

No plant is popularly so well known as this charming evergreen, which has a wide range, from the extreme North to Florida. It requires no special description, but we should caution those who have seen it not to form their ideas from those sad and false conditions in which it is sold on our streets, any more than they would do of a pond-lily done up with oak leaves! So is the poor thing sold, and it cannot protest. In nature the Mayflower grows in long trails under dry leaves, or amidst abundant moss, the white, or rosy, odorous blooms peeping out shyly from their coigns of vantage. It has evergreen, oblong, elliptical leaves, more or less scurfy with rufous hairs. The capsular fruit is very rarely seen. The writer once ran across it near the summit of Mt. Wachusett.

Following this plant, or coetaneous with it, is the leather-leaf, or *Cassandra* [*Andromeda*] of the swamps. This, too, has thick, persistent leaves, but a bushy habit. Usually it is a shrub two or three feet in height, and the pendulous branches show rows of white, heath-like flowers, hanging from their lower sides. One might at first think that he had found some kind of blueberry, but this plant forms dry, inedible capsules. About the same time comes the even prettier Upland Cranberry or Bearberry, *Arctostaphylos uva-ursi*, a well-known medicinal plant. This, in Southern Rhode Island, say in Exeter, forms vast beds so that the earth appears carpeted with it. Its delicate pink flowers are beautifully urn-shaped, and it has a sub-acid, berry-like drupe, containing five to ten nutlets. There is also an alpine species on our higher New England summits, as of Washington, Lafayette, and Katahdin.

The first weeks in May exhibit a number of blueberry plants in flower, all of the botanical genus *Vaccinium*, and also the quite similar but more reddish black huckleberry, *Gaylussacia resinosa*, so called from its sticky leaves. This plant is named after the noted old French chemist, Gay Lussac.

Blueberries and huckle- or whortleberries are distinguished from each other botanically by their fruits; as, for that matter, they are so distinguished gastronomically. The one has juicy, the other gritty, seedy berries. Each has its advocates. The writer sometimes thinks he prefers the coolness of the huckleberry to the wine-ful skins of the sweeter blueberry. All have pretty flowers, while those of the high-bush blueberry are positively charming. They are apt to be half-full of honey. One of the prettiest effects we ever saw produced with plants was by filling a plate with clusters of ripe blueberries, plump and luscious, and surrounding it with a rim of the scarlet bunch-berry, or dwarf cornel. No flowers could be more entrancing.

Rhode Island possesses three species of

huckleberry; viz., the dwarf, the blue dangle, and the common black. The dangle has large, open, bell-like flowers. We last saw it on the scene of the Great Swamp Fight in Kingston. We also have three or four kinds of blueberry and two proper cranberries. These last are likewise of genus *Vaccinium*.

A very beautiful shrub, at once suggesting its natural relations, is the *Leucothœ*, a bush of some amplitude, with petioled, serrulate, glossy leaves, and scaly-bracted, terminal, spiked racemes of pure white flowers. It seems odd enough now, but the writer used to find this plant near the Vitriol Works in Providence.

The pretty northern *Andromeda polifolia* does not come within our limits, but we do have the staggerbush, *Andromeda ligustrina*, as a very common shrub in swampy grounds. Farmers allege, according to Darlington, that this plant produces in sheep a disease called "staggers." It is well, perhaps, to say right here, and to emphasize it, that many plants of this heath family are more or less poisonous and to be handled with care. Especially should they be kept from young or inexperienced persons. None of them are dangerous to touch, but even the U. S. Government now warns the public against any eating them. Even water in which their leaves have been steeped is noxious.

May is glorious in many parts of our State with the pink azalea or swamp-cheeses,—often, also, most erroneously called honeysuckle, as is also, still more foolishly, the humble columbine. We have true honeysuckles (genus *Lonicera*), who object to the forging of their proud family name.

The pink azalea used to be especially splendid up the Pawtuxet River. It comes later and really has a more grateful color than the *Rhodora*, whose flowers, preceding the leaves, are magenta in color. This shrub is unusual in Rhode Island, but common as near us as Sharon.

White azalea abounds with us. This is the sweet-scented, sticky species. Both the Azalea and Rhodora, in fact, belong to the renowned genus *Rhododendron*, and of that genus we have the crowning glory in our State in the noble rose-bay. It should unquestionably have been chosen for the State flower, if we had to have one, because it not only embodies the name of the State, but here reaches its acme of elegance. As every one knows, it abounds in the great swamp of South Kingston, and from thence extends as far as Wickford. One who has ever passed through forest avenues or lanes, high over-arched with its blossoming boughs, can never forget it. We hope now and then that an awakened conscience may arise for its protection; otherwise it is doomed. With it grows the Mountain Laurel (*Kalmia latifolia*), but this is found throughout the State. To us it is as beautiful as its more pretentious cousin.

"Its cups of tender snow, touched with a rosy glow
And warm, sweet shadows trembling over all."

The smaller Lambkill, *Kalmia angustifolia*, has deeper colored flowers constructed on the same pattern, salver form with ten cavities to receive the anthers, and it has the same elastic filaments. Every one has, in the larger species, touched these off to see the pollen fly. Dr. Gray used to compare them to the pea-shooter of a boy.

If, now, we add the various Pyrolas, the Indian-pipes, and Prince's-pines, we surely make an excellent showing for the Heath family.

WM. WHITMAN BAILEY.
Brown University.

INTEREST IN WINTER BUDS.—It will be found intensely interesting to study the nature of the winter buds of various trees as they prepare to unfold in the spring. They should be taken under observation just before they actually open, when they are being excited by the warmth of the season. Most large, scaly buds will reveal their complete history for the coming season as relates the growth. They will be found to contain miniatures of leaves and stems,—in some cases the flowers, too. The scales or leaf-coverings also have interest for the observer in their varying forms. The horse-chestnut has a coating of a sticky substance, as though to keep out the elements. Others will have velvety coverings like cloaks to keep them warm and dry. Some buds will cover flowers only, and these may be made to introduce spring by their being cut on branches, placed in water, and stood in a warm, sunny window. The Cornelian Cherry and Yellow Forsythia are willing subjects. The fuzzy buds of Elms should be among the observed.

GENERAL GARDENING.

THE CROWN IMPERIAL

—that tall flower that wets,
Like a child, half in tenderness and mirth,
Its mother's face with heaven's collected tears,
When the low wind, its playmate's voice, it hears.
SHELLEY.

SOME PRINCIPLES FOR THE BEAUTIFICATION OF HOME-GROUNDS.—The presumption that a man's personality can be judged by the aspect of his home is often met with all the civilized world over, and as a universal conception we take it for certain that it is not entirely without foundation. While everywhere the privilege of seeing the interior of a person's abode is only conferred to a few, the outdoor part is generally taken in lieu by the multitudes. It is not our intention to reflect here on the reliability of such inferences. All we desire is simply to give some suggestions as to how a suburban or country residence of moderate and more extensive size may present itself to its best advantage.

The home owner living in a fashionable section of a city outskirt is under an unwritten moral obligation to keep the appearance of his grounds up to the general standard of his locality. In many cases he is ambitious and tries to outrival others. The less depth and extension of his foreground, the more difficult the task. There is often no space for trees of any dimension, and in the employment of shrubs and flowers it needs the most judicious selection to find just what is effective and to avoid overcrowding. This is the reason why many of our leading landscape gardeners assert that it sometimes takes all their skill and good judgment to arrange a more limited foreground of a suburban home really artistically. Simplicity augments refinement, and restfulness gives the scenery its dignified character. In this instance, shrubs and (if space allows it) trees should be used only in flanking the building, and the practice of planting them in mingled groups, instead of scattered singly over the turf, is now, I am glad to say, recommended by competent landscape artists. Good results will reward rational open ground culture; and if hedge shears be kept away and things be permitted to grow naturally, it is still the better. These groups, while marking the side border-lines, are also intended to establish privacy to some extent; and thus the general aspect, while attractive and in front entirely open, indicating the liberality and hospitality of the owner, nevertheless, for the outsider, bears the unwritten inscription: "Behold my home and come in—if you are my friend."

Fortunate the man who can lay the cornerstone of his residence about forty to sixty rods off the dust and restless bustle of a public street. His opportunities to beautify his home increase with every rod he gains perspective. In nearly level or in rolling locations, the site slightly sloping toward the road is ideal and considerably simplifies the general arrangement. A house situated back on a commanding place, its main front facing the street, I am always inclined to flank by trees, which are best planted sideways, a few rods protruding over the front-line of the edifice. The rules of our modern landscape art do not call for symmetry, but in selecting these trees care should be taken to have an eye to their future contours, choosing such that will agree with the architecture.

Trees confer distinction and grandeur. This should be well considered in lawn-planting, especially in the formation of the fore scene, which, as a rule again, is to be kept open to the public eye. It is invariable here, where a home is to appear at its best and the picture will be the more exquisite, that the more need prevails for a general air of quiet repose. If simplicity is the chief object, a few ornamental solitaires may ultimately be all that is required for the composition.

Shrubs, by their abundance of variety and richness of their floral display, are especially adapted to *brighten* lawn sceneries. There are various ways and many occasions where shrubs can be used advantageously. When set in

groups, the exterior boundaries should be mixed with ornamental grasses and herbaceous plants, a scheme that always proves effective. Again, there is space for a single specimen on the turf, perhaps as a forerunner of wooded sections or for indicating a dividing line on an open lawn expanse. Shrubs in connection with trees are indispensable for protecting and bordering home-grounds, for while advising liberality at the front scene, I otherwise cannot lay weight enough on strict maintenance of privacy. To my mind, the essentials of an ideal home-life are quiet, rest and retirement. The hypochondriac and crank may close his grounds with brick and mortar, or plank it up to the height of the Chinese Wall; the thoughtless home-maker crowds his lawn with tall shade-trees, making his outdoor-life beneath them the focus of his neighbors and the rest of the world; but the wise man will first of all aim to have beauty and dignity united in the outward appearances. He will also be well aware of the absolute necessity for privacy, without which the tender home affections and associations cannot thrive. To shelter outdoor home-life, the mixed tree and shrub border is the best screen. Its waving inner lines, forming little bays and promontories, may be composed of flowering shrubs and herbaceous plants. If there is any danger of monotony in the street or road frontage, it is easily overcome by varying the tree and shrub material. The questions about the necessity for enclosures, and of their density and rigidity, are all more or less answered by the nature of the surroundings of homes, just as it is obvious that privacy on a large country place is more easily obtained than on a five-acre suburban lot. It will also be understood that on more extensive grounds the front scene is not necessarily to be the only open view. A side glimpse is sometimes not less enjoyable to the passer-by, and can be offered without impairing the private character of a home.

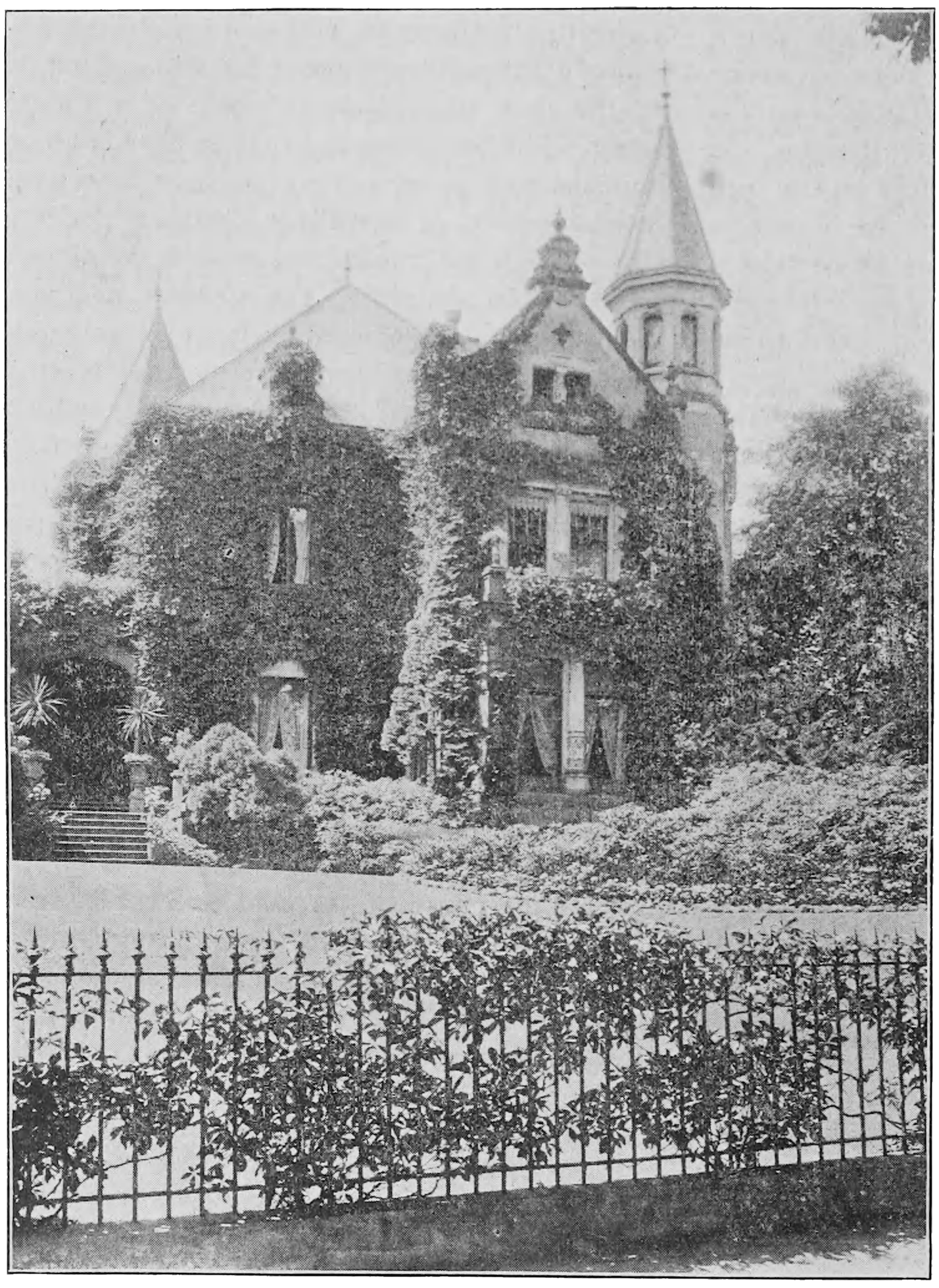


FIG. 1. A WELCOMING FRONT LANDSCAPE.

And now, before I lay down my pen, let me add a few words about drives and walks. They are needed to facilitate communication between the residence and public road, and are necessary to connect the different buildings and sections on an estate. We know that in their outlining the graceful curve is preferable, but according to my observation the mistake of allowing drives and walks to interfere with the front scene is still frequently made. To lay the entrance straight, opposite the front

TREES AND SHRUBS SUITABLE FOR PLANTING ALONG THE SEASHORE.—During a recent visit along the New Jersey coast, between Asbury Park and Long Branch, I was very much interested to note the kinds of plants that thrived best there in the sand and gravel. There are many beautiful summer residences at Deal Beach, Elberon, Holly Beach and West End, and evidently many dollars have been expended on their surrounding grounds, the plants thriving there proving a valuable object lesson to future planters in like locations.

The Californian Privet evidently comes first as a hedge plant, thriving in places exposed to the full blast of the sea gales and almost down to the water's edge. The best kept hedges are afforded a slight protection during the winter by having a temporary board fence built on the windward side or on exposed corners, and these are hedges that would be a credit to any part of the country. The Althæa, Osage Orange and *Rosa rugosa* complete the list of plants used for hedge purposes, and all seem to thrive fairly well.

Among the shrubbery it was really surprising to see what a large list is capable of being grown successfully in such apparently uncongenial localities. Weigela, Tamarix, *Prunus Pissardii*, *Rhus cotinus*, *Deutzia gracilis*, *Spiræa Thunbergi*, *Berberis Thunbergi*, *Hydrangea paniculata grandiflora*, lilac, *Philadelphus coronarius* were among those looking quite contented and making a good showing.

Very nice specimens of *Retinospora*, *Thuja*, *Biota* and *Abies* were noted among the evergreens, but all in more or less sheltered positions; while the native juniper and holly grow almost down to the beach in very exposed positions.

There seems to be a dearth of street trees at most seashore summer resorts for some reason or other, in comparison with more inland towns. The Sweet Gums, Pin Oaks and Scarlet Oaks thrive well in the surrounding country, and one would think they could be planted with success along the streets, even in sand and gravel, if sufficient good soil is placed around the roots at the time of planting, to give them a start, as that is very necessary in all kinds of planting in such places.

Flowering plants, suitable for gardens around summer cottages that are closed up from six to nine months in the year, and when the gardens are left much to themselves, should be largely of a perennial nature. They will come up year after year and greet the

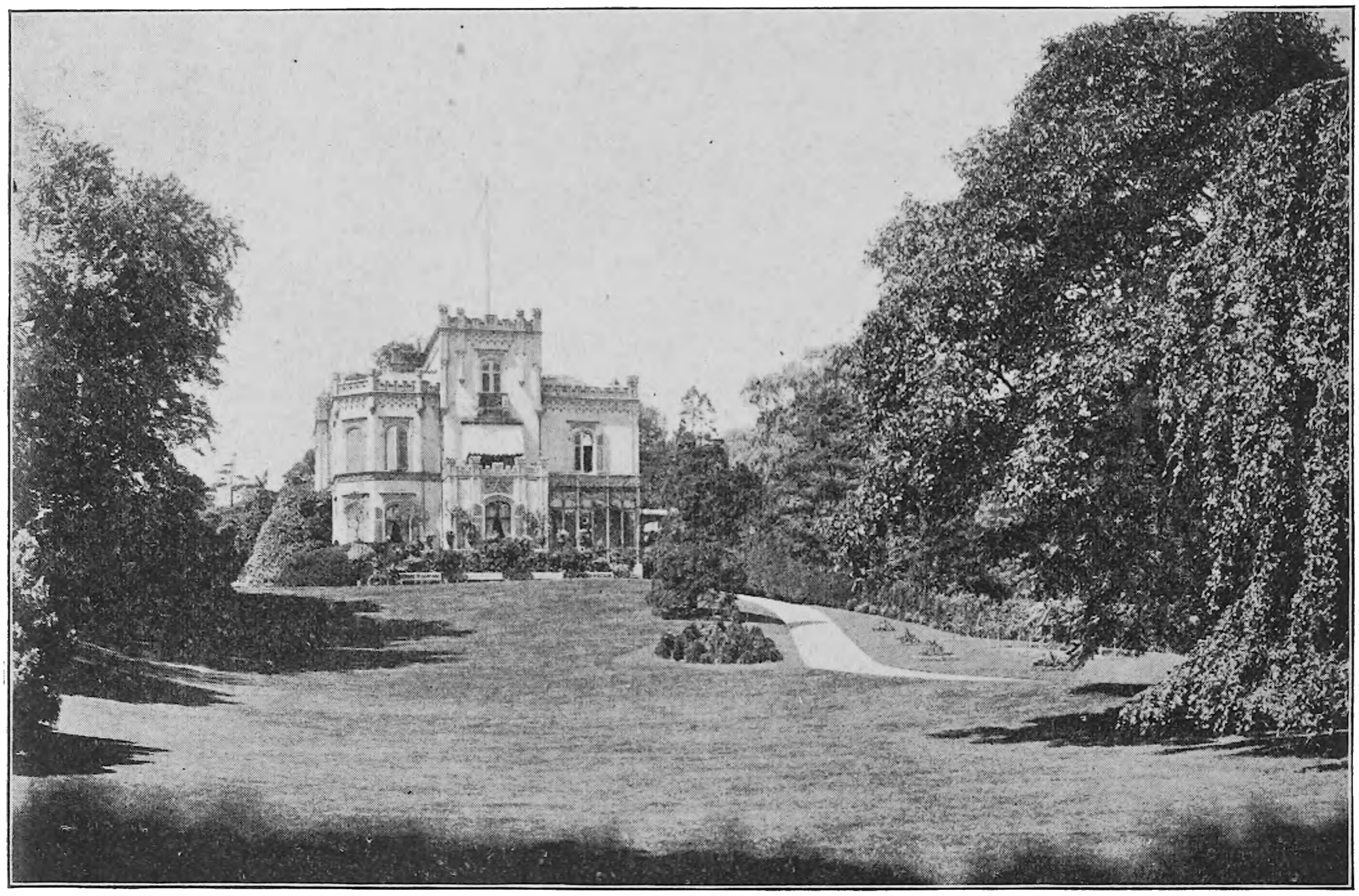


FIG. 3. THE EFFECT OF A GENTLY WINDING WALK, BORDERING A NARROW LAWN.

returning visitor, care being taken to choose those kinds that will bloom during the occupancy of the house, as many of the hardy perennials bloom before the season begins at such places and after it closes. It is some satisfaction to know that a well-kept garden is not an impossibility, even along the seashore. E. HEMMING.

[The suggestion regarding street or shade trees is very apt. The sojourner from the city, who expects to escape from the intense summer heat, often finds he has indeed "jumped from the frying pan into the fire," for, in the absence of a sea-breeze, the seashore resorts are invariably scorching hot, shade trees being very little used. We also endorse the recommendation of oaks for this purpose. They are sturdy trees, and adaptable for what are generally considered poor locations.—ED.]

PRUNING STORM-WRECKED TREES.—A large area of our country was recently visited by a most disastrous storm, which clothed every tree and blade with a heavy coating of ice. The great weight of ice upon the branches cannot be estimated, but its enormity is evidenced by the broken branches and even huge trunks in some cases.

Greater damage than by the storm itself may yet be the result of improper pruning and lack of care for the afflicted trees. A few words of direction may not be amiss.

Do not use such haste as to employ men who know nothing or but little about trees. A fear that the trees may "bleed to death" will occasion undue haste in many cases, without good reason though that fear may be. The "bleeding" may be considered of excess sap that would have gone to support the parts now broken or cut off. It can do no serious harm to any well established tree.

See that the branches are cut off smoothly and a complete covering of bark around them. In very many cases the broken branches have fallen and stripped the bark from the remaining portion. If these stripped surfaces are extensive, they will rarely heal over satisfactorily, and the branches should be cut below them. Where left and where any cuts are made, paint the surfaces thickly with any ordinary paint. Shellac is considered unusually good. If these surfaces be "bleeding," or if the weather be rainy, the painting may have to be delayed until the wood is dry. In all cases, the paint must be renewed during the year and the year following.

Do not allow branches to be cut away in such manner as to leave short stumps. In nine cases out of ten such stumps decay.

Where a great quantity of shoots spring from the pruned branches, they should be thinned out before they are more than six or eight inches in length. At this period they may be pulled from the tree "by the roots;" if cut off, more shoots may follow. Silver Maples and poplars usually produce great quantities of new shoots following pruning.

A lesson learned by the recent storm is that a better class of trees should be planted than the two mentioned in the preceding paragraph. The Maple invariably breaks in every severe wind. Oaks bear the storms of countless ages, and represent a strength and lasting quality that should be representative of all planting intended to be permanent.

KEEPING GALAX LEAVES FRESH.—Will you kindly tell me how the Galax leaves which come from the South are kept for weeks and months by the general florists, so they may have them at hand when wanted? A florist asked me for the information, and said he had put them in water, but found they would not keep. J. C. G.

New Camburgh, N. Y.

[Leaves of any kind have almost no need for water if kept in a cool, darkened place. In fact, water is a detriment after they have stored up a certain quantity. The atmosphere and other conditions recommended would not induce evaporation from the leaves, and it would easily be possible to give them a superfluous, damaging amount of moisture.

Mr. Harlan P. Kelsey, Boston, Mass., who handles millions of these and Leucothœ sprays annually, advises that they may be allowed to remain packed in sphagnum moss in their original cases almost indefinitely in a cool cellar, or preferably in a large ice chest.—ED.]

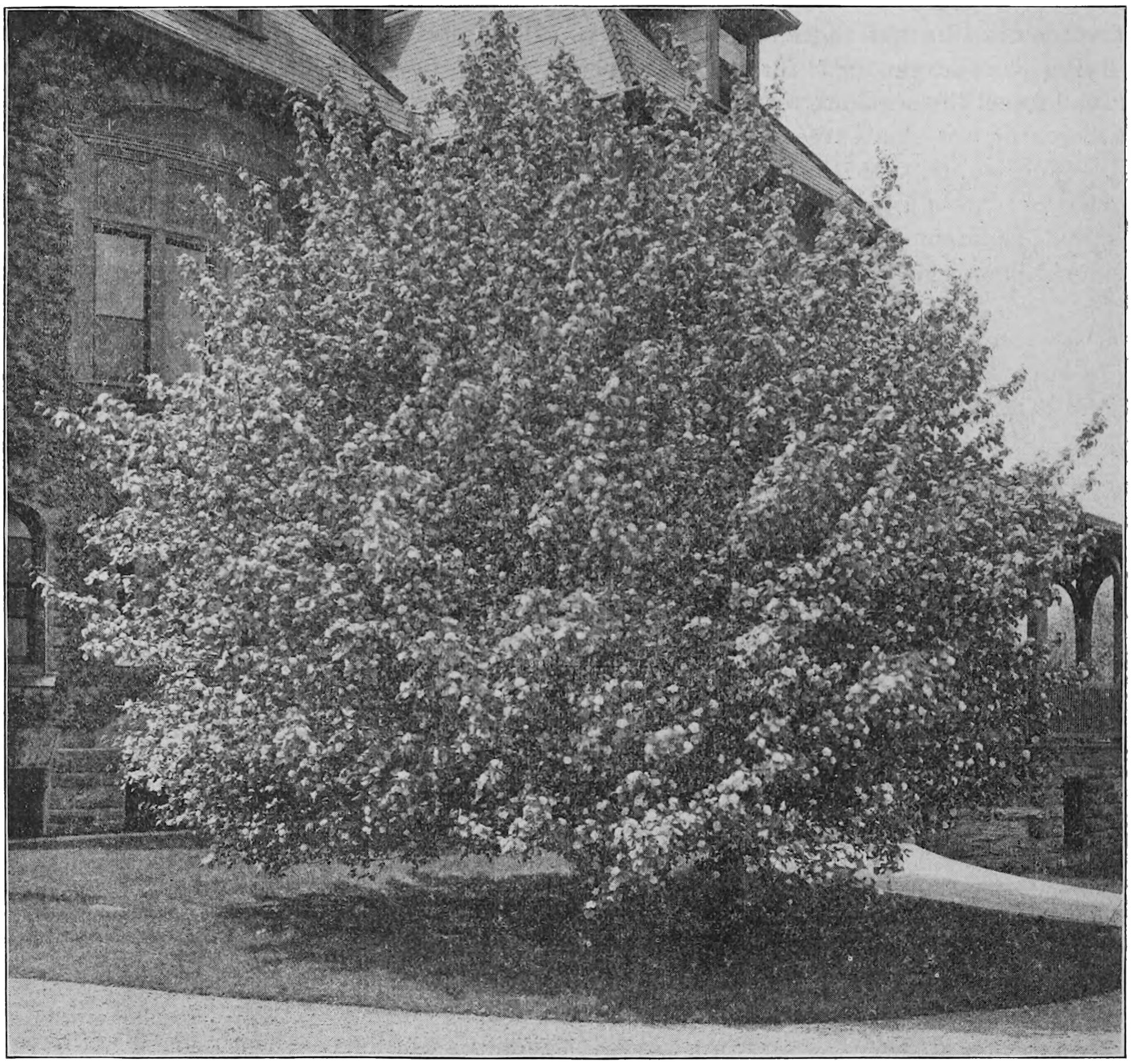
TREES FOR DAMP SITUATIONS.—I have about half an acre of open ground, low-lying and bordered by a pond that floods over the western edge in spring, with the result that trees I set out too near this edge were killed. I now think of setting out a row of trees further back,

still on low ground; but which has not been flooded so far. I have selected the following list, in order to secure variety, as well as trees likely to grow and give plenty of shade: One Tulip Tree, one Sweet Gum, one Kentucky Coffee, one English Ash, one Oriental Plane, one Balsam Poplar. Please advise as to the adaptability of the above trees for low ground, and when you would advise transplanting.

Hillsdale, N. J. A. E C.

[The selection you have is a very good one for the purpose. The Sour Gum is also a very useful tree for planting in such a position. *Magnolia glauca* would also do remarkably well there. This is an excellent time to plant them —ED.]

A BEAUTIFUL AMERICAN HAWTHORN.—The word hawthorn is so popularly associated with the British *Cratægus oxyacantha*, our beautiful native species are very frequently overlooked. Probably the best of these, *C. coccinea*, is here illustrated, the specimen being located on the property of John T. Morris, Esq., "Compton," Chestnut Hill, Philadelphia. Where it has ample room for development it always makes the sturdy, rounded form seen in the picture, and thereby differs from its relative across the water. Its foliage is far from being hawthorn-like, as we generally understand the term, for



CRATÆGUS COCCINEA.

the leaves are large, broad and but little lobed or cut. Undoubtedly the foliage of our subject is not as handsome as that of *Oxyacantha*. But there are other merits that make it equal to any. The heads of white flowers are borne in great profusion, as the picture imperfectly shows, and these are followed later by large berries the size of good-size grapes. The latter turn from green to a bright red color making a most brilliant effect.

SOME DESIRABLE PLANTS FOR LAWN.—The Oriental Spruce is a much finer ornamental evergreen than the Norway Spruce. Its dimensions, when mature, are about the same as the latter—perhaps a little less spreading and more conical. The green of its foliage is brighter.

The double, pink flowers of *Cerasus Sieboldi* are most exquisite. It has been before the public long enough to be better known and receive the popularity it merits.

NEW OR RARE PLANTS.

GROFF'S HYBRID GLADIOLUS.—The improvements made in recent years in Gladiolus at the hands of Mr. H. H. Groff have attracted wide attention and commendation from those qualified to speak. The old type was capable of producing handsome flowers, therefore an improvement in any degree must necessarily produce most charming results.

NEW HYBRID TEA ROSE CORONET.—Rose Coronet is said to be a true, everblooming Paul Neyron Rose, the beautiful, full, double form of which is well known. In the bud the color is a rich, deep carmine, which, as the flower opens, lightens to a soft, pearly pink. It is very fragrant. The Dingee and Conard Co., West Grove, Pa., are the originators.

NEW HYBRID AQUILEGIA.—A distinctly odd Aquilegia hybrid is being disseminated by Messrs. James M. Thorburn and Co., of New York City. It is said to be a combination and selection of *A. cærulea glandulosa*, *Stuartii* and *chrysantha*. Most of the flowers come perfectly flat, the spurs being eliminated, and are in form and color like a clematis. From the latter appearance it gains the name *Aquilegia clematidea hybrida*.

PAPER MULBERRIES FRUITING.—Mr. James Macpherson, writing in *Park and Cemetery*, says of *Broussonetia papyrifera*, the Paper Mulberry: "At the South the plant seems to be represented by both sexes, one of which has purple flowers. At the North, although they seem to be naturalized in places, * * I have not noticed the two sexes." In the Meehan Nurseries recently appeared a number of fruiting trees which were carefully preserved and propagated. The flowers, however, show but one conspicuous color, and that is orange. The coloring is of small, protruding, fleshy portions, giving an odd and interesting appearance to the ball of flowers.

ASPARAGUS COMORENSIS.—*Asparagus Comorensis* is more like *A. tenuissimus* than it is like *A. plumosus*, but is entirely different from each. It is more feathery even than *A. plumosus*, and is the fastest growing asparagus we have, so far as known. A string of it can be grown as fast as smilax, without any special care.—*American Florist.*

THE HARDY FLOWER GARDEN.

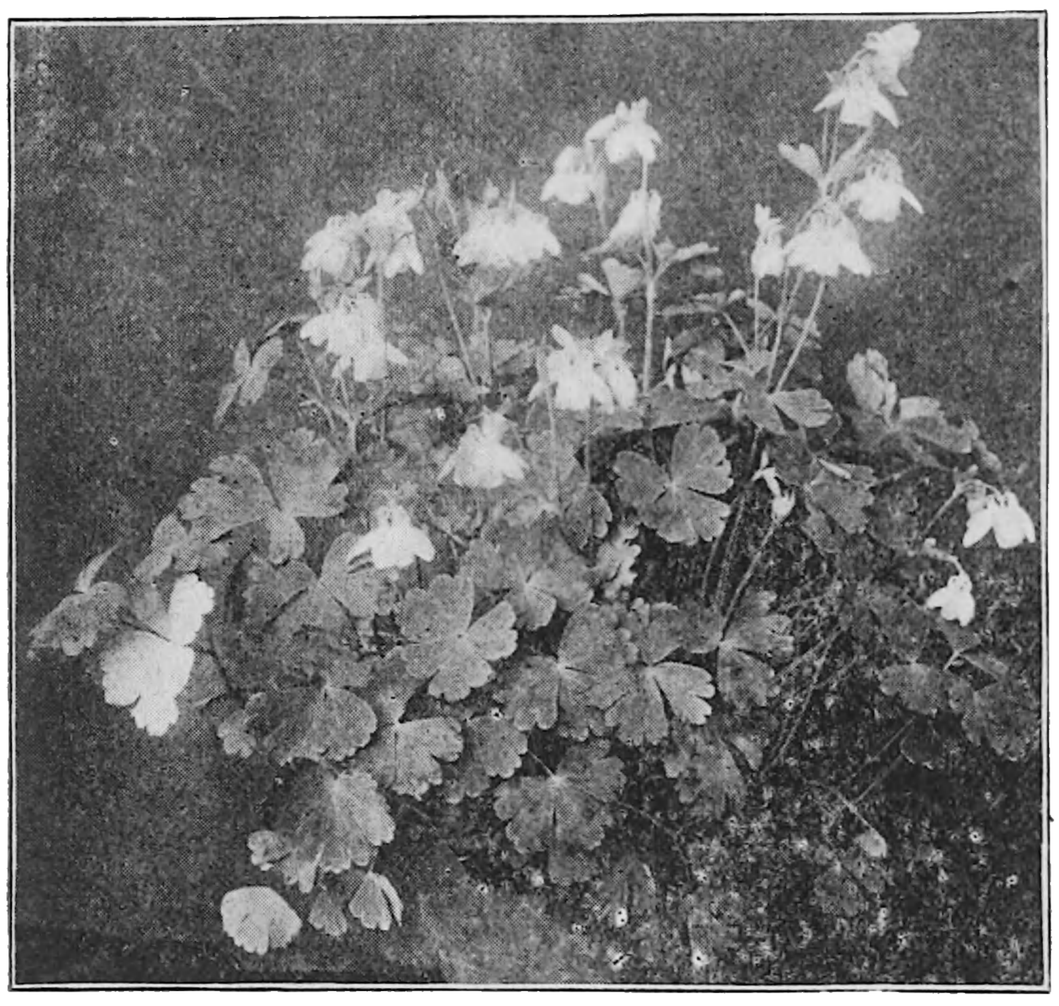
SHRUBS AND HERBACEOUS PLANTS FOR A HARDY BORDER.—A Massachusetts correspondent asks for a list of desirable blooming herbaceous plants and shrubs to occupy a border in a very cold locality. A continuous display of flowers from April to November is desired. Without knowledge of the width or length, the following are suggested. Several large-growing plants might have to be omitted:

Berberis Thunbergii
Rhodotypos kerrioides.
Cornus Mas.
Rosa rugosa.
Prunus Pissardi.
Hydrangea paniculata grandiflora.
Yucca filamentosa.
Pyrethrum, double white.
Pæonies
Japanese Iris.
Perennial Phlox.
Chinese Larkspur.
Rudbeckia Golden Glow.
Achillea, "The Pearl."
Eupatorium cœlestinum.
Pyrethrum uliginosum.
Aster alpinus.
Aquilegia flabellata nana alba
Geum atrosanguinea fl. pl.
Thalictrum roseum.
Rudbeckia fulgida.
Digitalis purpurea alba.
Helianthus Maximiliani.
Aquilegia chrysantha.
Dicentra spectabilis.
Physostegia denticulata.
Veronica Teucrium.
Helianthus doronocoides.
Forsythea viridissima.
Berberis purpurea.
Cornus alba.
Exochorda grandiflora.
Spiræa arguta.
Berberis vulgaris.
Spiræa opulifolia.
Centaurea macrocephala.
Lychnis Chalcedonica
Hemerocallis graminea.
Boltonia latisquama.
Iris orientale.
Iberis sempervirens.
Campanula persicifolia.
Helenium striatum.
Digitalis purpurea.
Helenium autumnale.
Iris pseud-acorus.
Aster Tataricus.
Iris pumila.
Aster Novæ Angliæ.
Boltonia glastifolia.
Lamium variegata.
Helianthus giganteus.
Lysimachia verticillatus.
Hibiscus militaris.
Lysimachia clethroides.
Hemerocallis fulva.

DWARF WHITE JAPANESE COLUMBINE.—When one becomes a little interested in hardy herbaceous perennials, he quickly adds to his appreciation of the extraordinary merits exhibited by this class of charming plants, and not infrequently do such persons soon become so absorbed as to adopt the collecting and growing of them as a great hobby. To just these lovers of garden flowers does the new Dwarf White Japanese Columbine strongly appeal; to others, it is simply a pretty little columbine without great distinction. But let us examine its points, partly following the rather poor

illustration given in these pages. The purity and daintiness of the numerous white flowers first attract our attention ; note how the short-spurred bells hang close to the large leaves, the latter forming a contrasting background. These flowers are among the earliest of columbines to appear. Then the color of the leaves is better than of most columbines, having a smooth, glaucous green appearance that adds richness. Unlike others, too, the foliage lasts better throughout the summer under trying conditions in full sunlight. The height attained is about one foot. Altogether, it is one of the very best novelties of recent introduction.

Most columbines enjoy a little shade and rich though light soil. A good, deep loam



AQUILEGIA FLABELLATA NANA ALBA.

brings good results. Almost any well-kept garden or flower border will furnish a good location. Doubtless the chief subject of these notes would make an admirable ornamental plant for forcing. The full botanical name is *Aquilegia flabellata nana alba.*

To Keep Tulips in Bloom Longer.—I was told never to let tulips go to seed, to pick the seed pod off as soon as the petals had fallen. If left it would spoil the blooms for another season. When my tulips were nearly gone, I went to the bed and picked off all seed pods, and, as there were but few flowers left, I snipped the seed out of them also, leaving the flower perfect. By thus doing, I stumbled upon a fine way to keep them in bloom longer. These tulips made a fine show two weeks longer. The double tulips that came later, I treated in the same way, and so long did they stay I thought the petals would never fall.

In *Park's Floral Magazine.* Eliza Bradish.

FRUITS AND VEGETABLES.

McKinley Early Grape.—The McKinley Early Grape was one of last year's introductions at the hands of Mr. Allen L. Wood, Rochester, N. Y. It is of the Niagara type, a fact which at once establishes confidence in its quality. It is a cross between that variety and Moore's Early. The latter is black ; the progeny is white. It ripens two weeks earlier than Moore's, is of excellent quality, and productive.

The New Premo Dewberry.—What will probably prove a valuable addition to the list of blackberries, in the dewberry section, is the Premo, which is being introduced by Myer & Son, Bridgeville, Del. They say that it is equal or superior to Lucretia in every respect, and has the additional merit of ripening from 7 to 10 days earlier.

Thanksgiving Prune.—The new Thanksgiving Prune promises to be a variety of plum possessing great merit. It is of superior quality, containing a large amount of sugar, but its great claim to merit is the fact that it will keep in perfect condition for many weeks after picking. Not only will it keep until Thanksgiving (whence its name), but under favorable conditions, you may enjoy it for Christmas or New Year's.—*Peach Growers' Journal.*

Transplanting Cherry Trees.—To successfully transplant cherry trees, the best time is quite early in the spring as soon as the ground can be worked, or late in the fall.

Some persons, in order not to lose a season's growth of their tree, as they imagine, are tempted to move cherries even after they have started to blossom. This is, in nearly every case, useless, as the tree will, in all probability, die. The cherry is an exception to the general rule, as all the other fruit trees, if severely pruned, can be transplanted even though they have started to push out into leaf or flower.

W. J. C.

BIOGRAPHY AND LITERATURE.

THE RETURN TO AMERICA.

My native land, now in the genial Spring,
While the green buds are bursting on the tree,
Back with the bird that far, on wandering wing,
Had gone to distant climes, I come to thee.

And leave the Old World far and dim behind,
Like to some floating vision fading fast,
Where he who seeks for worth shall little find,
Amid the rubbish of the ruined past.

How fair thy fields, spread out all broad and green,—
How pure thy skies are arched above, and blue;
No fairer and no dearer land, I ween,
The pilgrim finds, the world's wide journey through.

HOWARD WORCESTER GILBERT.

F. K. STEELE.—Many of our readers will recognize with a degree of familiarity the name of F. K. Steele, Festus, Mo., articles from whose pen were frequent in the pages of the MONTHLY. News just comes of his death, but without date or particulars,—and in fact we have no information to offer with this statement beyond what his writings have revealed to others. He was a rare observer and lover of nature in plant and animal life. Evidently he made a close study of the habits of birds, as we believe he contributed of his observations to the government bureaus. By those who have followed his writings, he will surely be missed.

GERMAN NAME OF MIMULUS.—To the interesting chapter on Mimulus ringens, in the February number, I would like to add the name by which the German people know this flower, *i. e*, *lachmaul* (laughing-mouth). With them it is a great favorite and almost always finds a place in their gardens.

Brooklyn, N. Y. DR. E. WILSON.

AMERICAN CYCLOPÆDIA OF HORTICULTURE.—Volume IV. of Prof. Bailey's Cyclopædia was issued February 19th. This completes the set.

GENERAL HENRY C. DWIGHT.—As Mayor of Hartford, Conn., General Henry C. Dwight ten years ago urged the establishment of public play-grounds for the children. Since then the development of the city's parks and public grounds has steadily advanced. Gen. Dwight still maintains an interest in the children and is Chairman of the South School Committee.

ROBERT MANNING.—Robert Manning, secretary and librarian of the Massachusetts Horticultural Society, died suddenly of heart disease, at his home in Salem, February 17th. Mr. Manning was born at Salem, July 18, 1827. His father was a noted pomologist and he, himself, had wide horticultural knowledge, especially in this branch. He had been for many years in charge of the extensive library of the Massachusetts Horticultural Society and will be missed by those who frequented the reading-room. He was most painstaking and exact in the compilation of records and other literature of the society.

PROF. LAMSON-SCRIBNER, IN THE PHILIPPINES.—Professor F. Lamson-Scribner, chief of the Division of Agrostology of the United States Department of Agriculture, has been given charge of the Bureau of Agriculture which is being organized in the Philippines.

NOTES ON DELPHINIUM AND KING ALCINOUS.—My translation of Dioscorides [March issue] was made from the Greek text edited by Sprengel (Lipsiæ, 1829), I., 420 f.; but I failed to heed a Latin note by Sprengel (n. 18, p. 420), to the effect that the position of the word "dolphinlike" is uncertain; and standing as it does in some MSS. after "oblong," the translation quoted by the author of the article is fully justified. I regret my failure to read this Latin note before sending my letter.

Alcinous was king of the Phæacians when they lived in Scheria. L. H. ELWELL.

Amherst, Mass., March 7, 1902.

GEOGRAPHICAL DISTRIBUTION OF GENTIANA ANGUSTIFOLIA. — Gentians generally inhabit the cooler parts of the globe, and are mostly found in alpine regions,—one being found in the Himalayan Mountains at an elevation of 16,000 feet above the level of the sea. The beautiful blue, which is so much admired in the species we now illustrate, is the prevailing tint, and especially among those which are found in the hyperborean regions. "On the Swiss mountains," says an English author referring to gentians generally, "these beautiful little plants are very abundant, and the splendid blue color of masses of Gentian, when once seen can never be forgotten." The same may be said of the gentians of some American mountains. Indeed, when we see a mass of the Narrow-leaved Gentian in their Atlantic seaboard homes, we admire them quite as much for the pleasant memories they suggest of long time travels, and they seem rather wanderers from some other land than genuine natives of their present home.

HOPNISS —In reference to Hopniss, mentioned on page 160, October MONTHLY, I beg to refer you to "American Wild Flowers," published by the American Lithographic Co., New York, Mail and Express Building, Broadway. This work has been reproduced as "Wild Flowers of Canada." This is not correct,—though many of the flowers are Canadian as well as United States,—for flowers know no geographical political bounds.

On page 216 (or plate 216) you will find Hopniss attributed to Kalm. Mr. Kearney, of Columbia College, wrote the descriptions. He may (or should be) able to give his authority for the note "Hopniss."

Montreal. JOHN HUGH ROSS.

TRANSLATION OF SCHIMPER'S GEOGRAPHY OF PLANTS.—Among the forthcoming publications of the Clarenden Press is an authorized translation of Schimper's "Geography of Plants," by Percy Groom, M. A., and W. R. Fisher, B. A.

THE FORESTER.—In January the "Forester" and "National Irrigation" became incorporated and are now issued under the title of *Forestry and Irrigation*. The new magazine will continue to be the official organ of the American Forestry Association, and will be sent to the members upon the same terms as the "Forester" in the past The new magazine will also be the official organ of the National Irrigation Association, though the identities of the two organizations remain separate, as in the past. During the year just completed, 589 new members have been received into the Forestry Association. During the same time there were dropped from the rolls 123 members, and there were 71 resignations and 16 deaths. The active membership now stands at 1,849 members.

OUR NATIONAL PARKS, by John Muir; published by Houghton, Mifflin & Co., Boston. Illustrated by numerous full-page half-tones. Appropriately dedicated "To Charles Sprague Sargent, steadfast lover and defender of our country's forests." Made up of sketches first published in the *Atlantic Monthly*.

The title of a book frequently fails to convey a good impression of the general interest it may contain; and many meritorious works are hidden and lost by the mass of literature that forces itself to the fore by one of many means. It is to be hoped "Our National Parks" may not be among the former, but will receive the popular attention it well deserves, for but few will peruse the book and not feel that he has communed indirectly with nature—that all-inspiring source of much that is good in man.

It is quite evident Mr. Muir has spent considerable time in the great forests of the West; he writes as one who has been surcharged with natural and untamed life, yet without apparent enlargement of the scenes and his surroundings. The author states—and he well inaugurates his effort—that he has endeavored to show forth the beauty, grandeur, and all-embracing usefulness of our wild mountain forests, reservations and parks, with a view to inciting the people to come and enjoy them, and get them into their hearts, that so at length their preservation and right use might be made sure.

Mr. Muir writes briefly, with a note of sadness, of the devastation of natural beauties following unlimited advances of the cultivator. He pictures vividly the vast expanses of beautiful flowers, one of which thirty years ago occupied "the great Central Valley of Califor-

CARNATIONS AND PICOTEES, FOR GARDEN AND EXHIBITION, by H. W. Weguelin; published by Geo. Newnes, London, edition imported by M. F. Mansfield & Co., New York.

"Carnations and Picotees" is hardly a useful book of practical instruction to the American gardener; but it will be attractive to those who have a broad interest in carnations and desire to be well informed. Picotees, Malmaisons, Bizarres, Flakes, Selfs, Fancies, and Tree Carnations are terms Americans seldom hear,—in fact they are avoided from pure ignorance of their identity. The reader of this work has these terms made plain and will find interest in the subject of their particular uses as garden plants in Great Britain. The book is illustrated by excellent half-tone cuts.

GENERAL NOTES.

BIRD'S-EYE MAPLE, CURLY WALNUT AND QUARTERED OAK.—It is not commonly known that certain terms applied by furniture-men and workers in fine wood refer almost entirely to the graining shown by methods of cutting oak, maple, walnut, etc., and the question frequently arises: What is a Curly Walnut or a Bird's-eye Maple? For clearer explanation, the following has been kindly prepared and illustrated by Mr. Wm. C. Butler, of Philadelphia:

The bird's-eye figure in maple is produced by cutting around the log, and continuing until the log is used up A huge knife, and not a saw, is used for the purpose, the wood being peeled off like a great shaving; hence bird's-eye veneers yards in length are made. Few species produce this figure. That obtained from the Sugar Maple is the finest in our country.

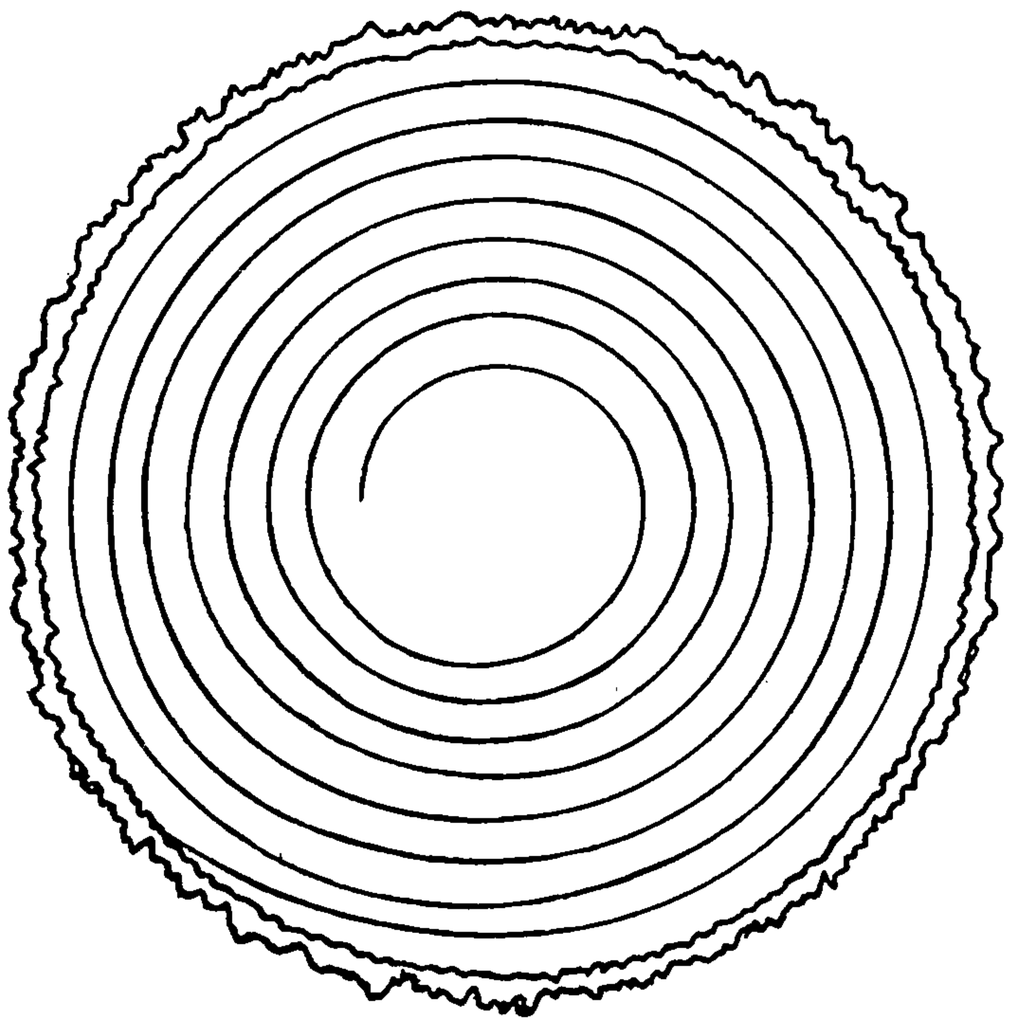
Curly walnut is the root and that portion of the trunk just above the ground. The log is sawn in the ordinary way. Curly walnut is obtained from all the species.

Quartered oak is produced by sawing the log into quarters,—hence the name. These quarters are then sawn into boards from the circumference toward the centre, and thus the "flake," that beautiful figure in quartered oak, is brought out

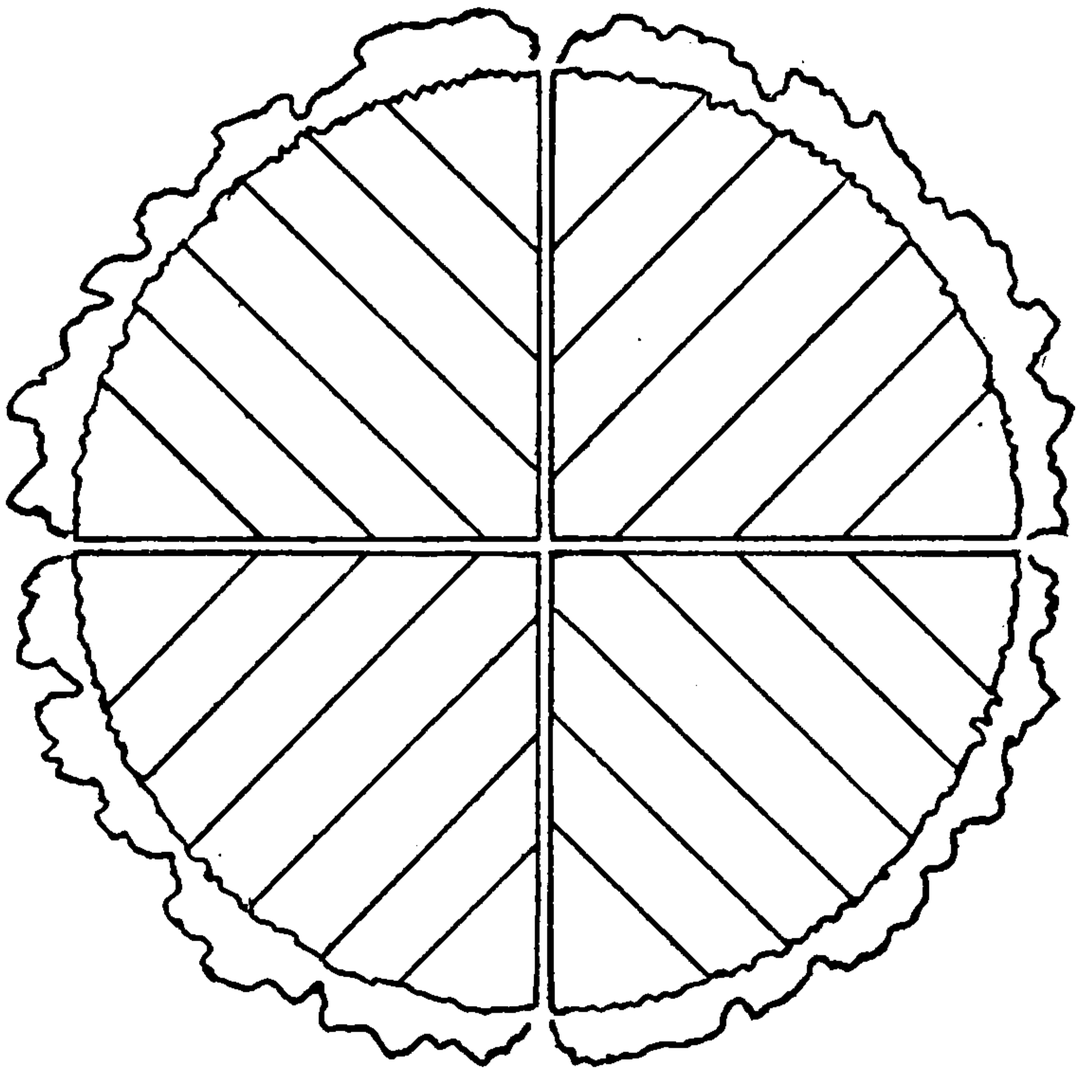
A DIMINUTIVE SPRING FLOWER.—I send a wild plant in flower, the name of which I desire. Of course, it is of little value, but it is a satisfaction to learn what it is. H. A. C.

White Sulphur Springs, Va.

[It is *Draba verna*, the Whitlow Grass, a native of Europe, but naturalized in America. It is our earliest spring flower. Other readers may recognize it by its diminutive size, having the appearance of a large, flowering plant in miniature,—scarcely an inch in height. It clothes the ground in great profusion, the tiny white flowers giving a frost-like appearance.]



HOW BIRD'S-EYE MAPLE IS CUT.



HOW QUARTERED OAK IS CUT.

1

2

3

IRIS FŒTIDISSIMA.

XYRIS FLEXUOSA

YELLOW-EYED GRASS.

NATURAL ORDER, XYRIDACEÆ

XYRIS FLEXUOSA, Muhlenberg.—Scapes slender, straight or sometimes slightly twisted, four to eighteen inches tall, two-edged above, bulbous-thickened at base. Leaves narrowly linear, flat or becoming twisted when old, one to six inches long, half to one and a half inch wide; head globose, or short oblong, obtuse, three to four lines high; bracts broadly oval or slightly obovate, entirely or somewhat lacerate at the apex; lateral sepals linear, about as long as the bracts, curved, finely fringed with short hairs on the wingless keel; expanded flowers three to four lines broad. Britton and Brown's *Illustrated Flora of the Northern States and Canada.* See also Chapman's *Flora of the Southern United States.* Gray's *Manual of the Botany of the Northern United States*, and Wood's *Class-book of Botany.*

Our pretty native flower, *Xyris flexuosa*, the Flexuose or Zigzag Yellow-eyed Grass, is in many respects one of great interest; in the first place because the genus of which it was one of the earliest known representatives is the tpye of a natural order with few species but those which the genus itself furnishes, and in the next place because of the lessons it furnishes to students in regard to the limits and definitions of species. If we collect a plant of the order for the first time, and in its immature state, without any knowledge of its real affinities, it would be at once referred to the sedge-grass family, or *Cyperaceæ*, though the absence of the three-edged character of the stipe might cause a slight hesitation. There might also be good ground for misgiving whether or not to refer it to the vast family *Juncaceæ*. But watching its complete development, the surprise would be to find it producing three handsome yellow petals, while members of the families cited are noted for the total absence of petals, scales taking the place ordinarily occupied by these floral members. The relationship to sedges or rushes is at once abandoned, and the three colored petals bring to mind the spiderworts, or *Commelinaceæ* family. But though in *Tradescantia* and others of the spiderwort family we have plants with somewhat grassy leaves, there is little else to suggest relationship than the distinct, three-petaled corolla, while the scaly head bears no resemblance to the inflorescence of the spiderworts. We have little difficulty, therefore, in assuming that our plant must be of a special natural order, perhaps related to but distinct from those named. It was these considerations, in addition to some other minor points, that induced the French botanist Desvaux, in 1828, to finally establish the natural order *Xyridaceæ*. Among the minor points distinguishing the order from its neighbors, the three-cleft style and radiate stigmas is a strong character as against the consolidated style and regular, scarcely capitate stigma of the Commelinas. The stigmas in *Xyris* are, indeed, very interesting under a pocket lens, each one being surrounded by a fringe of fine hair, giving the flower the appearance of a miniature daisy. Another interesting difference is in the capsule. In the Commelinas, the three carpels of which the ovary is formed coil sufficiently to make that member three-celled. In the Xyrids the coiling is weaker, and the result is a one-celled ovary. This point is especially interesting as showing that the varying degrees and direction of energy is one of the leading factors in the workshop of nature in determining the differences between one genus or species and another. In this case the life-energy was directed towards a greater development of petals, with a corresponding decrease in its work on the ovary.

In studying plants for systematic arrangement, botanists have to depend mainly on herbarium specimens. Characters derived from the behavior of living plants are, therefore, not often available. But when these can be had they are often of value. In the case of a comparison between Xyrids and spiderworts, the manner of flowering is found to have a striking similarity. The blossom of the latter is ephemeral. It opens in the morning, but

it is nothing but a withered mass before noon. The same character is exhibited by the Xyrids. Their beauty must be sought for early in the day. A patch in a meadow is a beautiful sight in the morning, in the afternoon the beauty has vanished away. It is possible that if the behaviors of these plants were more closely studied, close relationships might be discovered that are now unsuspected. No one, for instance, has suggested any close connection between the family of Xyrids and the Irises. The popular mind, however, has discovered a similarity, as the popular name, "Yellow-eyed Grass," indicates. This is evidently suggestive of the Blue-eyed Grass, *Sisyrinchium*. Of this the author of that very interesting popular work, "Nature's Garden," says: "Only for a day, and that must be a bright one, will this 'little sister of the stately blue flag' open its eyes, to close them in indignation on being picked; nor will any coaxing but the sunshine's induce it to open them again in water, immediately after. The dainty flower, growing in dense tufts, makes up in numbers what it lacks in lasting power, flecking our meadows with purplish ultramarine blue in a sunny June morning. Later in the day, apparently there are no blossoms there, for all are tightly closed, never to bloom again. New buds will unfold to tinge the field on the morrow." To this striking sketch of what similarly occurs in the behavior of our Yellow-eyed Grass, may be added that the *Xyris* not unfrequently has the habit of arranging the leaves in a flat, sword-like manner, as in many Irises. This evidently struck our early botanist, Clayton,—"Xyris is a term used by the great Roman writer on Natural History, Pliny,"—and though his plant has not been identified, it is generally supposed he was referring to some species of *Iris*. In sending his plants to Gronovius, he noted that it was a "*Xyris caule nudo simplici gramineo pinceo*," and Gronovius describes it in his "*Flora Virginica*" as "*Xyris foliis gladiatis;*" and the name *Xyris* was finally adopted for the genus by Linnæus. These resemblances to Iridaceous plants are certainly suggestive of relationship, though they may not be material standing alone.

The name *Xyris flexuosa* is credited to Muhlenberg, though his description does not accord with the modern rule, that a description should be clear enough to identify the species. He merely says: "*Xyris flexuosa* (2-valved seed-vessel), three-petaled, yellow perennial, zigzag,"—a description that might stand for any species.

This brings us to the other point of interest in connection with the question of what should or should not be regarded as a species. When Pursh wrote his "Flora of North America," in 1814, he enumerated but three *Xyris* species for the whole continent. Four years later Nuttall thought there should be five of them. Britton and Brown, in their "Illustrated Flora of the Northern States and Canada," issued in 1896, describe six for that section alone; and Chapman, in his "Flora of the Southern United States," makes a number of new species out of those that had been formerly named and described. Many botanists, when they take up the study of the whole genus, believe they see reason enough for new species.

Dr. Baldwin, when about to engage as physician and naturalist of the Long Exploring Expedition, was making a study of the genus, and among his specimens are three with provisional names, one of which, *X. elongata*, seems the same as one subsequently catalogued as *X. ambigua*.

It has been already noted that the name *Xyris* is the classical term for some sort of wild Iris known to Pliny, but some of our botanical philologists are not satisfied with this, but go back to the original Greek *Xyron*, a razor, and this confirms the general belief that the name was given to the Iris from its sword- or sharp-edged, razor-like leaves.

So far as the species under consideration is concerned, it has found no place among plants of special service to man. But it has doubtless some good properties, for it is remarkable that one species, *Xyris Indica*, in India; another, *Xyris Americana*, in Guiana; and *Xyris vaginata*, in Brazil, all have the roots and leaves in popular use for skin diseases. It seems to be reasonable that such a universal use among distinct races having little or no inter-communication should be founded on some satisfactory experience.

EXPLANATION OF THE PLATE:—1. A complete plant from Eastern Pennsylvania. 2. Flower slightly enlarged. 3. Bract enlarged.

Prepared by THOMAS MEEHAN.

WILD FLOWERS AND NATURE.

THE MAGIC OF SPRING.

A little sun, a little rain,
  A soft wind blowing from the west—
And woods and fields are sweet again,
  And warmth within the mountain's breast.
So simple is the earth we tread,
  So quick with love and life her frame,
Ten thousand years have dawned and fled,
  And still her magic is the same.

STOPFORD A. BROOKE.

ADDITIONAL NOTES ON XYRIS FLEXUOSA.—In addition to what has been said of *Xyris* in the main chapter, it may be noted that with a collection of many specimens from various sources, in a large herbarium, it is difficult to decide in many cases to which any new-comer should be referred. In most modern collections, especially from Mexico, while the plants generally are fully identified, it is common to have plants of this genus marked simply "*Xyris sp.*" The species here illustrated, *Xyris flexuosa*, is one of the more constant in its characters, and is easily determined. Yet variations are here. In our illustration it may be noted that the flower scapes thicken at the summit. This was noted by earlier describers as one of the characters by which to distinguish the species,—but other supposed good species are found to have the same peculiarity, and, indeed, scapes without this inflation are at times found on the same plant with the others. *Xyris flexuosa* is, however, the most northern species, and has a wider distribution than any other species. Britton and Brown note that it is found "in swamps and bogs, Maine to Minnesota, south to Georgia and Texas, flowering in July to September." The species, if indeed many of them deserve recognition as distinct, become more numerous as we advance towards the tropics. Should some of these be dropped eventually, *Xyris flexuosa* would probably be regarded as the immediate parent to which they should be referred. As we go northward, the plant, even in forms recognized as belonging to our species, becomes very diminutive. In Newfoundland the leaves rarely exceed three inches, and the flower scapes six; and in Mount Desert Island the plants are so cæspitose and the scapes so short and capillary, that the collector of an afternoon, when the flowers are not exposed, is apt to pass it over for the Needle Spike-rush, *Eleocharis acicularis*, or some of its congeners.

THE COLOR OF GENTIANA ANGUSTIFOLIA ROOTS.—Mr. W. F. Bassett, Hammonton, N. J., writes: "Your colored plate of *Gentiana angustifolia* in the April MONTHLY is perfect, except that the root should be a clear, light yellow." It will be recalled that Mr. Bassett's State is the home of this plant, and the correction should be authoritative.

FLOWERING OF THE HORSE-CHESTNUT.—In most families of plants, the order of opening in the flowers is either from the bottom upwards,—or from the top downwards,—proceeding to open regularly up or down. Mr. Joseph Meehan observes that, in the horse-chestnut, there are open flowers simultaneously on every portion of the thyrse or spike, so that the tree seems to be covered with flowers as if by magic in a growth of but a few days.

THE ODOR OF FLOWERS.—Mrs. Orcutt supplements her December notes on the "Fragrance of Flowers" by the following gleanings:

"In the botany of Mrs. A. H. Lincoln, later Mrs. Phelps, and sister of Mrs. Willard, so long principal of the Troy (N. Y.) Female Seminary, occurs the following:

"'*Odor of Flowers.*—The odor of flowers has its origin in the volatile oils elaborated by the corolla; its production results from causes both external and internal, but, in both cases, equally beyond our observation. Temperature renders the odor of flowers more or less sensible. If the heat is powerful, it dissipates the volatile oils more rapidly than they are renewed; if the heat is very feeble, the volatile

oils remain concentrated in the little cells where they were elaborated. Under these circumstances the flowers appear to possess but little odor. The humidity of the air also has its influence.'

"Fredricka Bremer said when she was in Cuba, the Provence Rose, elsewhere very fragrant, was odorless there on account of the atmosphere; also that though all smoked, the air was not pervaded with it.

"In the annual report of the Smithsonian Institute for 1897, mention is made of 'the appearance in 1829 of the first edition of Mrs. Lincoln's 'Familiar Lectures on Botany,' as a work which did much toward swelling the army of amateur botanists.' The one from which I copy is the twentieth edition, revised and enlarged, published in 1844, and all these years it has still been helpful to many, and her work in that book and in other ways is far beyond praise."

THE SNOW-WHITE BLOODROOT.—Last spring, 1901, the writer met with a sight so impressive it is not likely soon to be forgotten. Driving along a country road, the carriage in which we were seated was brought to a halt alongside an unpretentious woods, and following our first inclination, which is always to look around for flowers, we mounted the fence to take a general survey. The sight that met our gaze on the forest carpet was a literal mass of white flowers—the Bloodroot, *Sanguinaria Canadensis*. This was perhaps no unusual display in many localities,—but it is not always we stir around about the woods at the proper time, for they do not last long. The snowy white flower of the Bloodroot is not surpassed by any other flower. With such an abundance for Nature's own use, two or three can easily be spared the flower worshipper, and may be transplanted to the garden or partly shaded rockery with perfect ease.

IS NATURE NEGLECTED?—Much is written and heard of the beautiful things of Nature,—the charm of the woods and fields in spring, of the bursting buds, the welcoming notes of the returning birds, the modestly peeping flowers awakening from their winter's couch, and all the glad sounds and feelings of renewed life and strength. Nature-study in our schools is urged, and the necessity and advantages of keeping in touch with all that is pure and uplifting in the out-door world about us are constantly preached. With all this, how few break from the bands of social duties or from business cares and follow the underlying inclinations of their being and withdraw for even a few hours' communion with Nature! Why are these opportunities for manly inspirations, these body- and mind-refreshing possibilities, neglected in the face of so many willing advocates? It is simply the ruts of every-day life that are to blame and no lack of appreciation; the lack of foresight and the courage to escape from stagnating influences. But few persons are so situated they cannot go out if they will; and the woods are theirs. The proposition is before the reader. Have you accepted your privilege,—this great inheritance?

ANTS RAISE MUSHROOMS.—Professor W. M. Wheeler describes a species of ants that raise "mushrooms" for food. They first cut leaves into small pieces and carry them into their underground chambers. Then they reduce the leaves to a pulp, which they deposit in a heap. In this heap the mycelium of a species of fungus finds lodging, and the subterranean conditions favoring such a result, minute swellings are produced on the vegetable mass.

These are the "mushrooms," which constitute almost the sole food of the colony of ants that cultivate them.—*California Fruit Grower.*

RUBBER-GATHERING BEES.—When Para rubber-trees are tapped, after the gum has run into receptacles and stiffened, a species of large black ant is accustomed to cut out pieces of the rubber and carry them away. Bees also find use for India-rubber, and some species in South America actually cut the bark of trees that produce resinous substances in order to cause a flow of the sap. The gum is employed by the bees as a ready-made wax for their nests.—*North American Horticulturist.*

OFFICINAL PROPERTIES OF VIOLA ODORATA.—The flowers and seeds of *Viola odorata* act as a laxative in doses of three or four drachms, rubbed up with sugar and water; the root in one-half and one drachm doses is emeto-cathartic, but it is uncertain in its action.—*The Retail Druggist.*

inroads into the plain, the desert, the high barren mountain region and down to the river deltas. Become aware of the insignificance of yourself and your own work, in comparison with the creations of your teacher, and follow her guidance, by adopting the employment of trees in the formation of wooded sections or woodland, groves, clumps and solitaires. Modify the use of material in proportion to the areal space at your disposal, and your task, so far as the outlining part is concerned, is done. Hereafter, the artistic eye, foresight and skill are the main factors to be exerted in ornamenting and idealizing landscape sceneries.

In a previous article [April issue] we chiefly dwelled on the front scene and its exterior aspect; to-day we remain inside. Let the main scene, first of all, have its restfulness. Its general impression should, in spite of the opening for public view, make you feel that you are safe at home. If the situation is elevated, and an agreeable object lying distant beyond your grounds should offer itself, don't hesitate to draw it into your perspective, but take care to have its picture appear set in the foliage and visionary, framed by the arches of your own trees. The open lawn expanse may have its greatest width about midway distant from the residence and should be confined by promontory-like, protruding trees, either as solitaires—but then mostly with ramification down to the ground—or, if space allows it, in groups; thus, while framing your lawn, its bays still indicate further expanse and continuous broadways. The composition of a front scene has to some extent a certain similarity with the setting of an open landscape scenery on a stage.

As we have in consideration more extensive grounds, we have a wider field and more opportunities for painting in miniature, but owing to the fact that each location calls for special disposition, it seems rather unwise to enter into details. The accompanying illustrations are a few of the many and various objects available and suggestive for this purpose. For the remainder may it suffice to say, that the

SIDE VIEW OF A RESIDENCE OPEN TO APPROACH BUT WITH ABUNDANT PRIVACY.

home surroundings, so far as they are used purely as a park or as pleasure grounds, should be a unit, but apparently divided into distinct scenes, which nevertheless should be so harmoniously connected by openings and skilfully arranged intermediate perspectives that to the passing visitor the whole appears a series of ever changing pictures.

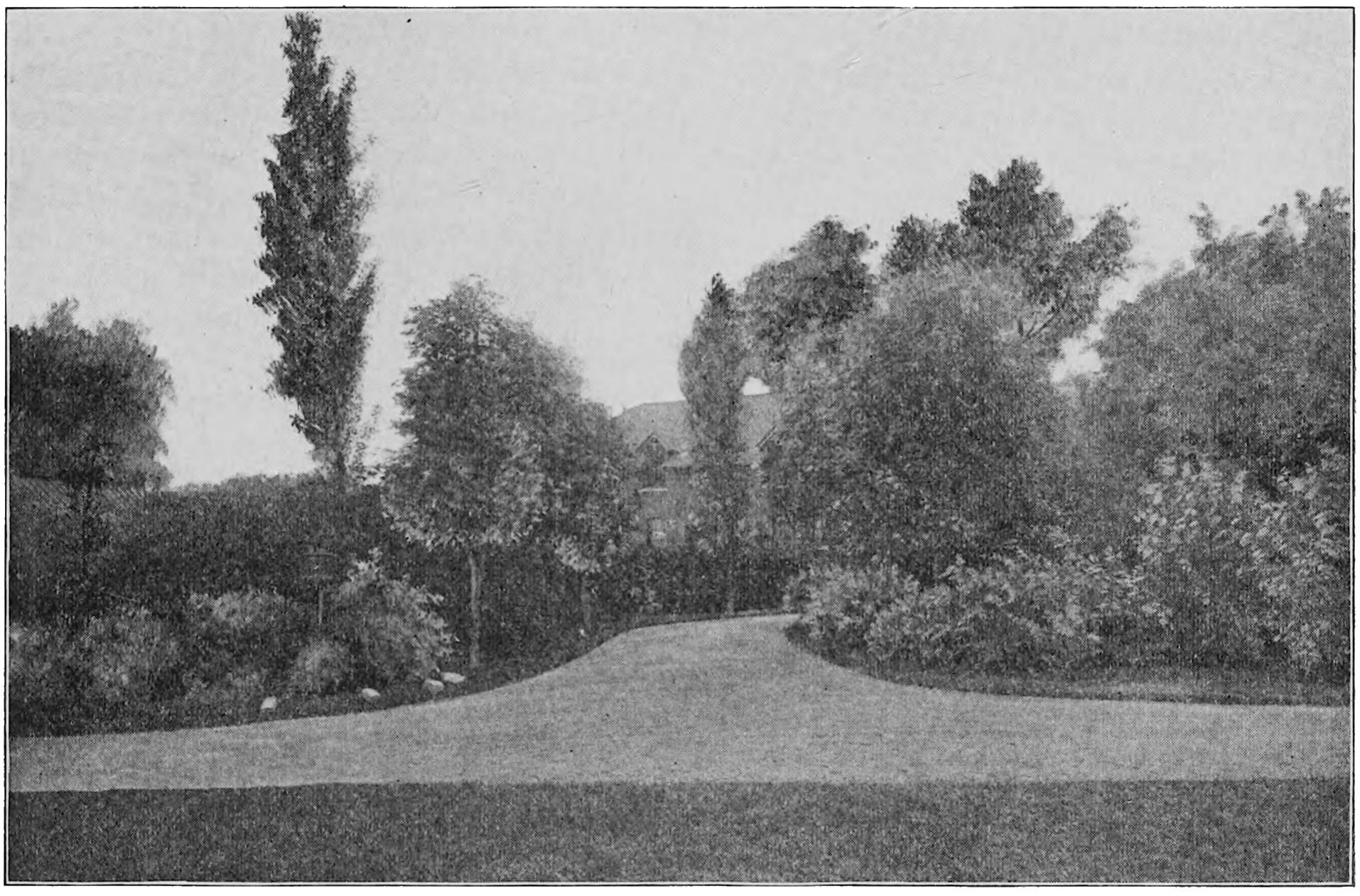
In alluding to the passing visitor, we again touch a question already hinted at in the previous essay, namely, the mission of drives and walks in parks and on the home-grounds. I said then they serve practical purposes; now I add they constitute and act as mute guides, leading the visitor through the sceneries and showing him the objects from standpoints

where the total effect is most beautiful and impressive. The absence of such walks on our home-grounds is always explained by the assertion—they are not needed so long as we have the freedom of our lawn. My own version is, we do not need the walks if we have nothing of picturesque interest to show, and not while we have our grounds arranged in such way as to enable us to watch nearly every blade of grass from our porch.

There is Madame la Comtesse promenading along her "*allées tournants conduisant a travers ses bois et bosquets*," during the morning hour, when glistening like diamonds myriads of dew-drops bedeck the turf, and her eyes, amid the leafage of the woods, enjoy the reflection of the golden sun-rays in their charming glory. There is "*die gnädige Frau*" pleasantly chatting with a dear friend, while following her winding garden walks, until she takes her seat in the "*Gartenlaube*" or beneath the crowns of her trees to take her afternoon coffee amid the virid vegetation of her home. By means of the same walks, she delights in a stroll through her grounds on a quiet summer night, enjoying the fascinating effect of the sceneries when presented in the magic light of the full moon. There is "My lady," not in vain retiring into the protection of her groves to find a peaceful resting spot, where she may commune with her soul, safe from annoying disturbances. All three look with pleasure at their gardens as the outdoor part of their dwelling, but the majority of their fair American sisters live a public life within the very sanctity of their homes.

Doubtless we would enjoy the genuine pleasures derived from outdoor home-life to the same extent it is in Europe, just as we at present welcome any fair foreigner in the tree, shrub and flower line, but to gain this end it necessitates first to concentrate our thoughts and energies upon the problem of the artistic composition of sceneries. If Nature has favored our grounds by the bestowal of a brooklet of running water, we ought to avail ourselves of something more than the sight of a dreary, oblong or round, pool-like pond, lined perhaps by a painfully regular row of weeping willows. The stable, farm-house, dairy and cottage, all can be placed in a way that they may be fit to be drawn into landscape sceneries, if not directly as objects, then at least perspectively.

The charming Petit Trianon of unhappy Marie Antoinette at Versailles, with its dairy



A STABLE IN A PRETTY LANDSCAPE SETTING.

farm and lovely lake sceneries, is one of the most fascinating, purely rural idyls within the boundaries of a park.

We have just witnessed again the glorious floral display of the Magnolias; we watch with eager eyes the unfolding of the dogwood and Cercis blossoms; we notice with delight the opening of the lily-of-the-valley; if herbaceous borders and an old-fashioned flower-garden are happy features of our grounds, they are objects of perpetual interest, but there is no saying what inexhaustible resources for recreation of body and mind may still be established with the advance of landscape gardening as a real art.

Upon our velvety lawn rests the radiant light of a clear May-day, and, as we glance over its sheet, we are convinced that it is in prime condition for tennis and cricket. The poor trees, alas, show every evidence yet of the disastrous icy burden of last February, but bid fair to partially, if not wholly, outgrow the damage this season. Things gradually reassume their brightness. The summer is the best time for making our plans,—perhaps we could convert this view into a scene that in time will inspire the landscape painter.

Laverock, Pa RICHARD ROTHE.

HAWTHORN HEDGES.—A Nebraskan correspondent inquires concerning the English Hawthorn for hedging—its hardiness and the proper planting methods of distancing and pruning.

The American Cockspur Thorn, *C. Crus-galli*, also makes a satisfactory hedge. The thorns are about 2 inches in length and are very thickly studded on the plants.

In regard to the proper distance to plant these plants, we would suggest that seedling plants be set one foot apart, and a double row be planted, arranging the rows 6 inches apart and setting the plants alternately in the parallel rows. This makes a broad-based hedge. The plants should be cut down to within 3 inches of the ground; they will then push up numerous shoots, and will make a thick, bushy hedge. If a double row is not wanted, then locate the plants 8 inches apart. If the English Hawthorn be used, say 3 to 4 feet plants, they should be set 18 inches apart. If *Crus-galli* be used, small, bushy, transplanted plants should be set 12 to 15 inches, and larger plants 15 to 18 inches apart. Only seedling stock should be cut to the ground. Transplanted stock should be reduced about one-half in size.

Both the English and the *Crus-galli* should be perfectly hardy in Nebraska, but there would probably be more satisfaction from the *Crus-galli* than from the English Hawthorn.

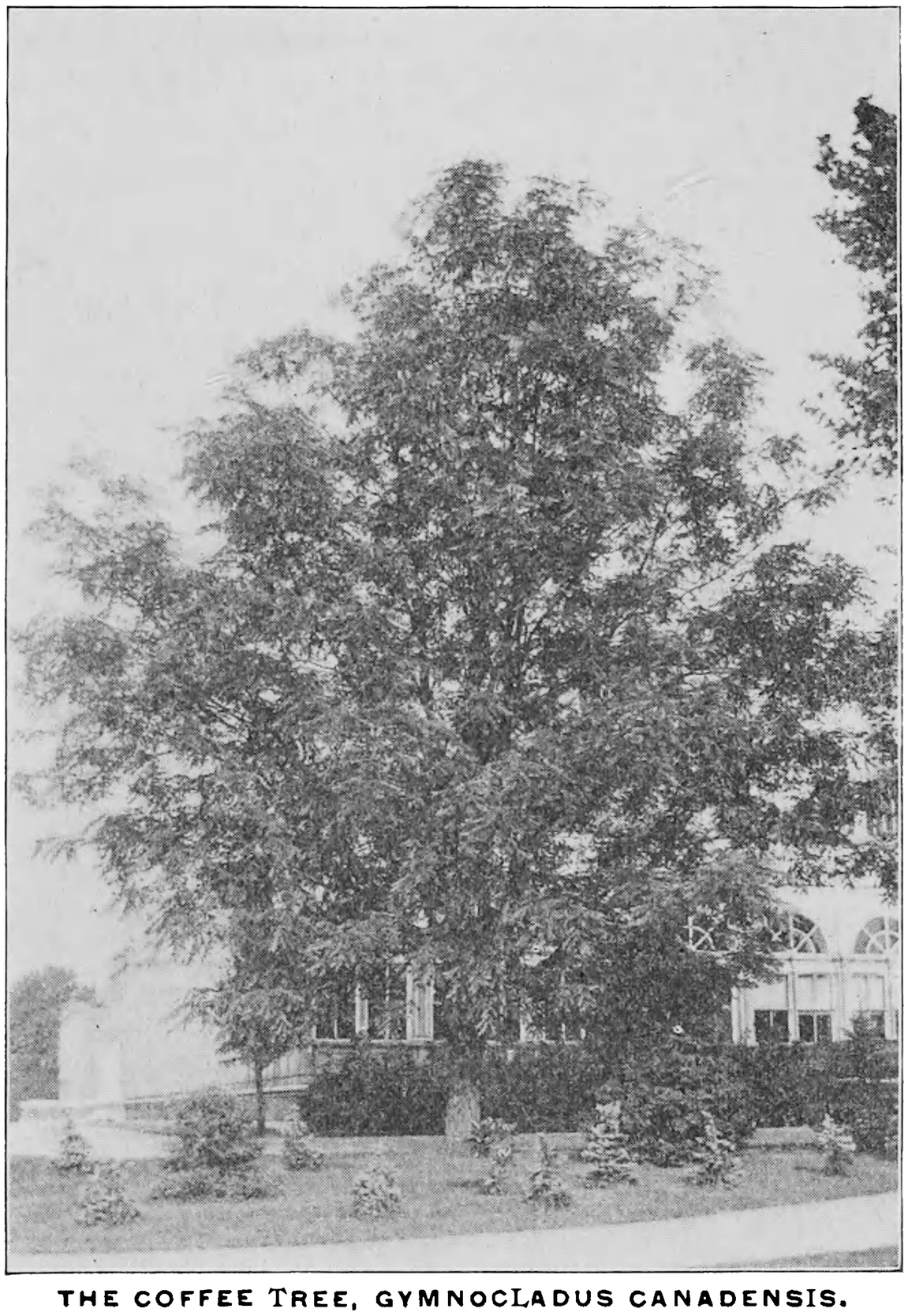
SOME HARDY ORNAMENTAL TREES.—The planter of trees in cold climates is often worried to know what he can safely select for transplanting. There is not only loss of money in transplanting trees that will prove tender, but also loss of time in getting trees established, which is often the more felt. To aid in proper selection, the following list is given by Mr. Timothy Wheeler, Moscow, Vt., supplemented by information in the Vermont Agricultural Report of the State Board of Agriculture. This list includes indigenous and cultivated ones. Immediate location may seriously affect hardiness more than the degree of temperature, but the selection is a careful and conservative one.

Scotch Pine
Austrian Pine
White Pine
Tamarack (Larch)
White Spruce
Norway Spruce
Colorado Blue Spruce
Hemlock Spruce
Balsam Fir
Arbor-vitæ
Black Walnut
Shellbark Hickory
White Willow
Cottonwood Poplar
Lombardy Poplar
White Birch
European White Birch
Paper Birch
Yellow Birch
Sweet Birch
Hornbeam
Beech
Chestnut
White Oak
Bur Oak
Chestnut Oak
Swamp White Oak
Red Oak
Scarlet Oak
Slippery Elm
White Elm
Cork Elm
Hackberry
Red Mulberry
White Mulberry
Tulip Tree
Sassafras
Sycamore (Plane)
Mountain Ash
Elder-leaved Mt. Ash
European Mt. Ash
Serviceberry
Scarlet Hawthorn
Longspine (Cockspur) Hawthorn
English Hawthorn
Locust (Yellow)
Honey Locust
Coffee Tree (Kentucky)
Mountain Maple
Striped Maple
Sugar Maple
Black Maple
Silver Maple
Red Maple
Norway Maple
Box Elder (*Negundo*)
Horse-chestnut
Buckeye (*Pavia*)
Buckthorn
Basswood
Sour Gum
White Ash
Green Ash
Catalpa

GYMNOCLADUS CANADENSIS—KENTUCKY COFFEE.—Many plants that have adaptations for special uses are not well known to the average person, because their identity is concealed by similarity of appearance to others. This is true of the Kentucky Coffee, or Coffee Tree, which is so well adapted for planting in damp ground and exposed places along the seacoast, where but a small assortment of trees

can be made to thrive. The leaf and general appearance of this tree is so like a locust many would mistake it for such. The racemes of greenish-yellow flowers in June are somewhat ornamental, and these are followed by a short, thick, curved seed-pod.

Nurserymen but seldom recommend the Coffee Tree to persons desiring a choice, ornamental tree, and this is because of its poor appearance while young, of a salable size. Up to the age of five or six years it is but little more than a straight, rough-barked pole, with perhaps a branch or two attached in anything but an attractive manner. The ends of the branches are blunt, uneven and of a peculiar bluish-brown, altogether forming quite a distinguishing character. But a little later in life the rugged branches become more numerous and symmetrical in arrangement, and have a personality that will make friends for the tree. Unlike its close relative, the Honey Locust, it has no thorns. The leaflets are broader than the latter, more resembling what is known as the Yellow Locust.



THE COFFEE TREE, GYMNOCLADUS CANADENSIS.

As may be seen by the accompanying illustration, this tree makes a large spreading growth. Specimens will attain heights of from fifty to one hundred feet.

When branches are present to make it possible, they should be pruned short on a tree just transplanted, as otherwise danger attends the moving.

The illustration was made from a photograph of a large specimen by Horticultural Hall, Fairmount Park, Philadelphia. This species is indigenous and is to be found in rich woods in the northeastern central States. Considerable interest is attached by its being one of only two members of a genus, the other species being Chinese.

THE PINK DEUTZIA.—All Deutzias are pretty, but, to the writer, the pink variety has particular charm. The flowers are mainly white and simply tinged with pink or carmine, rendering a delicate combination that is highly pleasing.

HIBISCUS SYRIACUS PÆONIFLORUS.—Varietal names amongst plants having many numerous, small variations in color and forms of flowers, frequently have but little significance, as some become reintroduced, by accident or intention, under new names, and one may buy the same perennial phlox, pæony, etc., under different names. Danger of this nature is not great in connection with the Althæa or *Hibiscus*, as but little attempt has been made to bring popular names into prominence.

With reasonable assurance the true variety will always be obtainable. *Pæoniflorus* is recommended as one of the best in cultivation. Its name has doubtless arisen from its large, full-formed flower, containing petals of good texture and a beautiful shade of pink.

ANDROMEDA JAPONICA.—The illustration on next page reveals a beautiful little evergreen plant, *Andromeda Japonica*. Good botanical

authorities point out that its proper name is *Pieris Japonica*, but it has been known for so long as *Andromeda*, the name *Pieris* will not stand.

As stated by Prof. Wm. Whitman Bailey, in the April MONTHLY, in his article, "Our Noble Heaths," the Andromedas belong to the Heath family, a trace of the relationship showing in the form of the flowers. What pretty flowers they are, too, the little snowy bells, clustered in drooping racemes at the ends of the branches, always standing out prominently against the dark green leaves. The buds on the racemes are formed the summer previous to flowering and are ready to open in the first few warm days of spring. In Philadelphia, at this writing (March 29th), a few flowers are open.

Andromeda floribunda, a species found in the southern Atlantic States, is most easily identified from *A. Japonica* by its erect panicles of flowers, and by its leaves not being clustered towards the ends of the branches. *A. Japonica* is thought by some to be more adaptable to general locations than the other, and is held in preference. Like in character to the Rhododendrons, Azaleas and Kalmias in their choice of soil, the Andromedas like a rich, light, well-drained position. In fact, they are quite genial with the plants mentioned, and are considered valuable for planting amongst them as a dwarf, foreground plant—rather dwarf in cultivation notwithstanding they are credited with heights of very large shrubs.

ANDROMEDA JAPONICA.

THE URGENCY FOR PROMPTNESS AND SOME CULTURAL HINTS.—Gardening work of any kind is not a thing that will submit to delays.

If new planting is to be done, it should be carefully planned at once, the necessary articles ordered and everything in readiness for execution of the plans at the earliest practicable opportunity. The plants promptly established will show their satisfaction by doing well.

Street trees should have the most approved guards placed about them just as soon as they are set. It takes but a few moments for a horse to permanently injure or destroy them. It also takes but a few minutes to adjust the guards, if in readiness. A large horse with a long neck easily reaches above a guard six feet in height; let the latter be at least seven feet.

Mulch transplanted trees with leaves, straw or litter just as soon as the planting is accomplished. A strong wind and hot sun quickly absorb moisture and make a hard surface of heavy soil through which air and fresh water cannot penetrate.

Decide to rid your trees of insects and check the ravages of disease by frequent spraying. Find at once what is to be fought and exactly what should be used to wage the warfare, and when to begin. Be well prepared for the time and for emergencies. Don't wait for attacks that are pretty sure to come, but get a little ahead of the depredators.

Prune transplanted trees that are to be so treated just as soon as they are set,—or before if convenient. If there is any good effect from pruning, give the tree the full benefit from the start.

If an established tree has one branch that needs pruning, or one dead limb to be removed, do not wait till next year in hopes there may be enough more to warrant a full day's work of the gardener. The one or two limbs removed or pruned now may be the means of saving treble the requirements a year later.

Should the pruning of summer- or fall-flowering shrubs have been neglected up to the time of their advancement in early spring, have it done at once, even though the buds have burst and the leaves are showing. They cannot be harmed at that time, and they will be improved by the competent pruner who cuts them back severely and aims to produce an abundance of strong, vigorous new shoots without intense compactness.

SOME DESIRABLE PLANTS.—*Desmodium penduliflorum* dies almost to the ground in winter, thereby receiving the term herbaceous; but in classifying for planting purposes it is placed among shrubs because of its strong-growing, regular, bushy habit. It is graceful in appearance and a grand "shrub" for many purposes.

In one of the Washington (D. C.) public squares, the half-vine *Jasminum nudiflorum* is used as a dwarf shrub, filling in a corner and kept to the height of a Japanese Berberry.

The Spice Bush, *Lindera Benzoin*, is an attractive tree of medium size. It is really of a shrubby nature, making a well-rounded bush suitable for backgrounds and natural effects. The numerous yellow sessile flowers are very attractive.

NEW OR RARE PLANTS.

RHODODENDRON BIANCHII.—Mrs. P. B. B. asks for information about *Rhododendron Bianchii*. Is it known to any readers of MEEHANS' MONTHLY?

NYMPHÆA SIGNOURETI.—A new French addition to our list of cultivated Nymphæas is *N. Signoureti*. Mr. George B. Moulder, a water-lily specialist, of Smith's Grove, Ky., considers it one of the best Nymphæas of recent introduction.

MAGNOLIA STELLATA.—It would be difficult to name a genus consisting of trees and shrubs containing so many beautiful and useful species as the Magnolia. From first to last of the season there is something to admire in one or another, in flowers, fruit, or foliage. The dwarf-growing Japanese species, *stellata*, is a favorite with many others as well as with me. The flowers are white, tinted with pink in the bud, are semi-double and fringed. Add to this that they are delicately fragrant, and there is an aggregation of good points no other sort possesses. Then consider its early flowering, for it is the first to open, the second week of spring bringing expanded blossoms!

I wish to say something concerning the proper position for this Magnolia, as I was the sufferer at one time by not having considered it. Place it somewhere where there is a dark background for the white flowers, such as evergreens would give. If on a lawn, the grass should be showing green blades by the time its flowers are open. The mistake made by me, to which I have referred, was in planting it too near a dwelling, the stones of which were gray. When the flowers opened, some evergreen boughs had to be placed between them and the wall, otherwise one would hardly have known they were there. L. G. D.

THE HARDY FLOWER GARDEN.

GROUPING PLANTS FOR FOLIAGE EFFECTS.—In grouping plants having marked characters of foliage, the usual forethought relating to the harmonizing of colors in the flowers should be accompanied by care in having the foliage effect to blend nicely.

For a grouping of plants having foliage very similar yet with sufficient differences to awaken particular interest in the whole; the Yucca, Iris, Hemerocallis, and Blackberry Lily will be found suitable, and will furnish flowers of their several kind from earliest spring till fall, with scarcely any interruption.

THE MOSS PINK—PHLOX SUBULATA.—Rock gardens and properly constructed rockeries are capable of affording a great deal of pleasure to their owners and the interested gardeners. Low-growing and creeping plants are naturally best adapted for such purposes, and various species of *Lychnis*, *Veronica*, *Saxifraga*, *Arabis*, *Ajuga*, *Cerastium*, *Iberis*, and *Phlox subulata* are always in demand. Perhaps none display greater brilliancy nor have more transient admirers than the above-named *Phlox*,—Moss or Mountain Pink, as it is variously termed.

PHLOX SUBULATA, MOSS PINK.

The Moss Pink grows wild on the rocky hillsides of Pennsylvania and in similar situations through several States southward. Those who have seen the plants thus describe the sight as wonderfully beautiful, the massed plants forming a carpet of rose-colored bloom.

Our illustration reveals the procumbent habit and its profuse flowering character. There are several prominent varieties in cultivation having flowers severally pure white (The Bride), lavender (Sadie), and pink (Gettysburg); the type is a clear rose color.

These Phloxes are adapted for general planting where anything of a dwarf, creeping nature can be used. They quickly cover the ground, only raising their flowers a couple of inches above the surface. In the earliest days of spring the flowers appear, the main flowering period seldom lasting more than ten days; but occasional flowers appear at times during the summer.

LATE SPRING PLANTING OF PERENNIALS.—Late summer and fall-blooming herbaceous plants may invariably be planted later in the spring than most earlier ones.

FRUITS AND VEGETABLES.

NEW EARLY BUSH BEAN, BURPEE'S BRITTLE WAX.—A new early bush bean sent out sparingly last year by Messrs. W. Atlee Burpee and Co., of Philadelphia, will this year be pushed extensively by that firm as one of the best of their recent productions. Its great qualities are claimed to be extreme earliness, great productiveness, and snappiness. It goes by name of Burpee's Brittle Wax.

CUCUMBERS AS CLIMBING VINES.—I wonder how many ever tried planting two or three cucumber vines close to the house or a fence, and training them up with strong strings, or a piece of poultry netting. I had one this summer, trained up the side of the house like a vine, and it kept fresher and gave me more cucumbers than any one hill in open ground. This would be quite a scheme for one living in town with limited room for gardening, and fresh cucumbers from the vine are far better than stale ones from the market.

MRS. A. D. BABCOCK,

In *Practical Farmer*.

CHAYOTE,—A NEW VEGETABLE.—Since our recent acquisition of tropical territory in various parts of the world, we have come into the possession of many novel vegetable products. Indeed, when we consider the vast extent of the Philippines alone, it is quite impossible to realize their natural resources. But besides

Apart from its practical utility, it appears to be a graceful plant, like many of its congeners, easily covering fences and trellises much as does our wild-balsam and the star-cucumber. The plant will winter wherever the ground is not frozen. It suffers from too great moisture or heat, but is, notwithstanding, more tropical than most vegetables. It appears to be extremely popular in the markets of Puerto Rico.

Unlike plants of the Squash family that we know, its fruit contains but one seed, very short-lived. This fact has, no doubt, militated against its spread. It may be easily grown, however, and its desirable qualities are such as to insure its popularity and eventual wide cultivation.

In general appearance it suggests the cucumber, but is a larger, more vigorous plant. It has three-angled or lobed leaves and axillary clusters of small flowers. Lowe compares the central column formed of the conjoined stamens and pistils to a small fungus.

The mature fruits are spiny, more or less compressed "as though built over the large, flat seed." Longitudinal grooves are quite characteristic of the fruit. The botanical name of the plant is *Sechium edule*. There are various kinds of differing value and size. It is eaten very much as are our summer-squashes and the English "vegetable-marrow," sacred to Mrs. Nickleby. In Puerto Rico a favorite way to prepare it is to section it, "boil it, then remove the flesh from the exterior shell, chop it into small pieces with meat and vegetables," and flavor with garlic, onions, red-peppers, etc. "The mixture is then returned to the empty shells and baked. The result is a rich and palatable dish."

The young shoots may be used as is Asparagus, and it is variously employed otherwise, for fodder, for forage, and for fibres. In Mexico the roots are used as a prolific source of starch, a kind which Herrero commends for its easy digestibility.

Brown University. WM. WHITMAN BAILEY.

SOME DESIRABLE STRAWBERRIES, BLACKBERRIES AND CURRANTS.—Be sure to set a good strawberry patch. Use a number of varieties that will follow each other in succession from early to late, so as to have a fresh supply as long as possible. Michel is about the earliest, and although it is not large it is a fairly good bearer and the berry well flavored. Lady Thompson begins to ripen soon after, and the familiar old Crescent is but little later. Beder Wood, Warfield, Haverland, Aroma, Brunette, and Marshall will fill up the gap until the season is quite well over and Gandy will finish it. I would never plant in the fall except the ground be thoroughly mulched, covering the plants as well, so that there will be no possibility of them being forced out by hard freezing. On the whole, spring planting is best.

A berry patch without blackberries would be sadly wanting. Of early kinds perhaps Early Harvest is the best for general use. It is not a large berry, but is very sweet and satisfying. Minnewaska seems to be taking the place of Kittatinny, which has long been the standard, because of the susceptibility of the latter to rust. Erie is also very good and so is Agawam. Snyder is exceedingly hardy, but the berries are rather small, and are apt to have a hard core.

The best of all currants in point of quality as far as I have tested the different kinds is White Imperial. This is not a good market variety, because the color seems to be objectionable. Fay is a good red variety, but it has the fault of being rather drooping in habit of bush and is hard to keep off the ground. Red Cross is proving to be very good, and so is Wilder. H. E. VAN DEMAN,

In *Green's Fruit Grower*.

WHITE HEATH CLING PEACH.—Clingstone peaches are not generally in favor except for cooking purposes, and even then it is doubtful that any one enjoys cutting away with a spoon the flesh of such a peach, as it is served at the table. Were it any form but round it would be less elusive on a saucer, and require less patience to attack without fear of its jumping off on the table-cloth. But this particular peach has its admirers. It is a handsome peach, of a purer white than Morris White, and has a nice grain that renders its flesh juicy and fairly tender. It is late ripening. Notwithstanding the above opinion, some housekeepers think there is special merit in clingstone peaches for canning, and particularly for spicing.

BIOGRAPHY AND LITERATURE.

WEEDS.

"Oh yet we trust that somehow good
Will be the final goal of ill,
To pangs of Nature, sins of will,
Defects of doubt and taints of blood;

"That nothing walks with aimless feet;
That not one life shall be destroyed,
Or cast as rubbish to the void,
When God had made the pile complete."

TENNYSON.

DIOSCORIDES AND HIS ERA.—Though the most noted of the ancient authors who wrote specifically or chiefly about plants, and the leading authority on their medical uses for nearly sixteen centuries, little is known of the life of Dioscorides. There are five writers upon plants to whom the name—or Dioscurides, as it is also spelled—is applied. It is generally conceded that there were not as many individual writers, but that some of the names are duplicates. Perhaps three would satisfy the requirements. Some get along with two, aside from a "spurious Dioscorides," who seemed to have lived at a later time, and used the name for fame or profit. If we assume there were three, one of them doubtless antedates the Christian era, living about the time of Antony and Cleopatra. The Dioscorides who wrote the *Materia Medica* is thought to have been a native of Cilicia, in Asia Minor. His name points to this. It was in full Pedanios Dioscorides Anazarbeus. The first seems to be a Roman cognomen, given to him because he lived in Cilicia Campestris, or Cilicia-of-the-plain, as distinct from that part of the province called Cilicia Aspera, or rough or mountainous part. The last indicates that he was of Anazarba, a city of Cilicia Campestris, a few miles from Tarsus. He says, in the dedication of his work to his friend Areios, that he had from early youth a desire to learn about the natural world, and in after years traveled in many countries, leading a military life. It seems evident that he visited various lands from the names applied to plants, often those that were local. That he was a physician, perhaps an attaché of the Roman army, hardly admits of doubt from his handling of the subject, confining himself to plants used as remedies, mentioning diseases to which they apply and modes of treatment. And from the way he addresses Areios, it appears they were fellow-physicians, following the same art or craft.

That there is doubt as to his era, and room for difference of opinion, is seen from the following, taken from the Meyer's *Geschichte der Botanik* (History of Botany), where the subject is very fully treated, as well as that concerning the five who bore the name: "There is considerable uncertainty about the time when he lived. Many, of whom I name Lambecius as chief, make him cotemporary with Antony and Cleopatra, placing him also before the battle of Actium (30 B. C.). Others, among whom Cigalini, the Italian, is prominent, bring him down to the reign of Nerva (96-98 A. D.). But the opinion of those who take a middle course, that he lived in the time of Nero and Vespasian (54-79 A. D.), and was a cotemporary of Pliny the Elder, is held by most and has the weightiest advocates." Several of these are mentioned, as Salmasius, whose edition of Dioscorides was the best before that of Sprengel, Fabricius, the learned author of works on Greek and Roman bibliography, Sprengel, and Meyer himself.

Chicago. E. J. HILL.

THE COW PEA.—Published by the Supervising Committee of the Experiment Farm of the North Carolina State Horticultural Association, Southern Pines, N. C. For free distribution to those interested in cultivation of the soil.

It often takes years of patient and persistent effort to bring general recognition of a great fact, while again others, perhaps of less importance, will travel with marvellous rapidity. But the slower way, bringing conservative treatment, will usually bear the best fruits and carry fewer mistakes. The Cow Pea plant—

more naturally resembling a bean, yet neither that nor a pea—is one of the great, useful things that have come before us slowly. Investigators that have learned to appreciate its value as a "green manure" for soils are constantly drilling facts concerning it into the minds of the cultivators, and yet it is too little known and used.

"The Cow Pea" is a treatise that makes plain the value and uses of the plant whose name it bears; the facts are so clear and the subject approached from so many standpoints, one cannot but be impressed by its evident value. Every one having possible interest in this subject should read this little booklet.

ART OUT OF DOORS, by Mrs. Schuyler Van Rensselaer; published by Charles Scribner's Sons, New York.

"Art Out of Doors" is not a new book in a real sense, but, unfortunately for many who have not profited from knowing and reading it, in a special sense it is new and deserving of general notice.

The title barely conveys an idea of the purpose of the work, which is so to make clear some principles of landscape gardening and development of outside home surroundings as to reveal it an art that is but seldom truly encouraged and of which but few are master.

Mrs. Van Rensselaer knows her subject and treats it in a manner that will leave no doubt of that fact in the minds of her readers. With no attempt at criticism, the reviewer has no doubt there may be conceptions of the author that might be assailed; but the purpose of the work is not to give the public a text-book that may make "Every Man His Own Landscape Gardener," but to raise up higher ideals relating to the subject.

If a truer love for Nature brought nearer to homes and hearts shall become established in our lives, such great books as this may be credited with a very large percentage of the honors that ought to be bestowed for the gift of public blessings.

PHYSICS OF AGRICULTURE, by Prof. F. H. King, University of Wisconsin, Madison, Wis.; published by the author. Second edition. Price $1.75.

Prof. King is recognized as an eminent authority on matters pertaining to soil, on which subject he has already written an exhaustive work. But as Professor of Agricultural Physics, he is well versed in general physical conditions of interest to the tiller of land, and the dairyman. "Physics of Agriculture" is a text-book designed for the student of agriculture and the progressive farmer. As the author states it, the burden of effort has been to lead the student to see *why* he should practice rather than *what*.

To know the nature and origin of soil movements, of soil moisture, the requisite of plant foods, and the functions of feeding and respiratory organs of plants, is a foundation upon which any man can work out success in practice. These are matters concisely treated by Prof. King,—but they occupy only a small portion of his book. Other important subjects are "Ground Water, Wells and Farm Drainage," "Principles of Rural Architecture," "Farm Mechanics," and "Principles of Weather Forecasting."

THE AGASSIZ ASSOCIATION.—*The American Boy* is the official organ of The Agassiz Association, and as such devotes three columns monthly to short notes on natural history topics of quite an interesting character.

GENERAL NOTES.

A FOREST SCHOOL FOR PENNSYLVANIA.—At its coming session the Pennsylvania State Legislature will be asked to establish a State Forest School.

TO MAKE CUT-FLOWERS LASTING.—As a rule cut-flowers will last longer if allowed to stand a short time in water before using. This simply applies, of course, where they are to be worn or carried as a bouquet, or used in decorations where they may not be placed in water.

TO PRESERVE FLOWERS.—Several methods of preserving the natural color of pressed flowers have been suggested, but the best, it is said, is that used in the New York Botanical Garden. After the specimens have been under pressure for a day or two they are laid in papers heated in the sun, and this is repeated until the drying is completed. This, it is said, preserves the colors perfectly.—*The Retail Druggist.*

RHAMNUS CAROLINIANUS.

CAROLINA BUCKTHORN.

NATURAL ORDER, RHAMNACEÆ.

RHAMNUS CAROLINIANUS, Walter.—Flowers pentamerous, with straightish veinlets in the leaves. Shrub erect, unarmed; leaves oblong-oval, obscurely serrulate, sessile, paler beneath; flowers perfect, in short axil'ary umbels, petals minute; styles united, stigmas three; fruit globular, three-seeded. Leaves three to five inches long, one third as wide, dark green and shining above, the petioles four to five lines long, veins prominent. Flowers small, whitish, three to nine in each umbel, which is not longer than the petioles. Berries purple. Wood's *Class-book of Botany*, and Britton & Brown's *Illustrated Flora of the Northern States and Canada*. See also Gray's *Manual of the Botany of the Northern United States*, and Chapman's *Flora of the Southern United States*, under the name of *Frangula Caroliniana*.

The Buckthorn has an honorable place in ancient history. Dr. Gray tells us *Rhamnus* is the ancient Greek name, derived from the plant's numerous branches. This would have to be applied to the European species, *Rhamnus catharticus*, which, though a profusely branching plant, is not more suggestive of a special name than numerous others. Paxton says it is "from the Celtic *ram*, signifying a tuft of branches." This seems to be a following of George Don, who says, in his "Miller's Dictionary," "from the Celtic word *ram*, signifying a tuft of branches, which the Greeks have changed to *rhamnos*, and the Latins to *ramus*." Pliny, the ancient Roman writer on natural history, speaks of Rhamnus as a sort of sprawling plant with whitish bark,—and Sibthorp, in his "*Flora Græca*," identifies this with what is known in our gardens as the Matrimony Vine, *Lycium Europæum*, and which he says is called *rhamnos* by the Greeks even to this day. The Greek word *rhamnos* seems to mean a strong white thorn, and the special application to the Matrimony Vine is obvious from its pale, spiny character. Though, however, our Buckthorn family was not the ancient *rhamnos*, it is the box-thorn of the Greeks, from whence our buckthorn has been derived, and is well represented by numerous species known and appreciated by these ancient people. Criticisms such as these may appear of small import, but matters seemingly trifling often have a bearing of great value in history. In this case it has been supposed that some rhamnaceous plant furnished the material for the crown of thorns in the Crucifixion, and either the *Paliurus* or *Zizyphus* are usually accepted as the plant intended. The great difficulty of making a crown of thorns out of any one of the species named has been against the acceptance of these suggestions. The *Lycium*, or Matrimony Vine, however, which, as we have seen, is the real *Rhamnus* of the ancients, could be so easily wrought into a crown with stiff spines, that it deserves at least a place among these speculations.

Our plant, *Rhamnus Carolinianus*, differs from other members of the old Buckthorn family in some slight degree. "Seeds not grooved. Flowers perfect," is the sum of these differences. The other members of the Buckthorn family have frequently some flowers all female, and, at times, others with stamens and pistils perfect in the same flower,—and there is a groove in the seed. On this account, Rafinesque referred it to the old genus *Frangula* of Tournefort, and rendered it *Frangula fragilis*. This was subsequently changed by Dr. Gray to *Frangula Caroliniana*, under which name it now goes by those who do not regard it as a true buckthorn. It has been truly said that what is or is not a genus or species is but the opinion of an expert. Our plant affords a useful lesson in this line, as up to this time botanists of equal ability write of the plant under either name.

The Carolina Buckthorn does not seem to have attracted the notice of our early botanists, not having been known till 1788, when it was first described by Thomas Walter in a work describing the plants of the Carolinas. Though it is not confined to that region, it has retained the

name of Carolina Buckthorn that Walter gave. Britton and Brown locate it "in low grounds, Virginia and Kentucky west to Kansas, south to Florida and Texas."

The plant well illustrates the difficulty in the way of adopting a distinctive common name for plants. Dr. Sudworth, of the United States Department of Agriculture, finds that it is called Indian Cherry in West Virginia, North Carolina, Mississippi, Texas, Louisiana, Arkansas and Nebraska. It is also known in the last two States named and in Iowa as Buckthorn, and in Nebraska and Texas as the Alder Buckthorn. In Alabama, Florida, and Louisiana it sometimes goes under the name of Yellow-wood; and Brittle-wood in Arkansas. Carolina Buckthorn seems confined to both Carolina and Pennsylvania. Nebraska calls it Stink-berry and Stink-cherry; while Texas has for it the undignified names Polecat-tree and Polecat-wood. Mr. Sudworth adopts Indian Cherry, but as this name is in such general use for *Amelanchier Botryapium*, Carolina Buckthorn seems the most desirable.

How the unpleasing names originated may be worth further inquiry. The author has not been able to detect any annoying odor in wood or berry, and has eaten a number of berries while writing this chapter without detecting any unpleasant taste. The astringency common to the whole Buckthorn family is a marked feature. A memorandum by Captain Lewis, of the Lewis & Clark expedition across the continent, affixed to a specimen of a closely-related species discovered on that memorable journey, reports that the berries of that species were used as an article of food by the Indians, but it is nowhere recorded that this species has served for a similar purpose Dr. Peyre Porcher, in his "Resources of Southern Fields and Forests," notes that a syrup prepared from the berries makes one of the best purgatives.

It is more than probable that if critical attention were given to the subject, the plants would be of much more service to man than they have been. Their close congeners in the Old World have many eminent lines of usefulness. An English author says of the ordinary Buckthorn that the juice of the unripe berries has the color of saffron, and is used for staining maps or paper; they are sold under the name of French Berries. The juice of the berries, when ripe, mixed with alum, is the sap-green of the painters; but if the berries be gathered late in the autumn, the juice is purple. The bark affords a beautiful yellow dye. The inner bark is said to be a strong cathartic and to excite vomiting. The juice made into a syrup is the officinal preparation. About an ounce is a moderate dose, and it was formerly much employed as a hydrogogue, from one to two ounces being given at a time. Of the Alder Buckthorn, which is especially related closely to our species, it is said that half an ounce of the inner bark boiled in beer often proves serviceable in dropsies, and that the unripe berries dye wool green, and the bark affords a yellow dye. Another species, it is said, is used by Portuguese fishermen in a decoction of the bark to dye their nets red, and Portuguese dyers extract a blackish-blue color from the wood, and a fine yellow from the fresh branches or young shoots.

Passing from its more material uses, its beauty commends itself to the lover of wild flowers. The flowers themselves are insignificant; though, among the earliest to open, they afford luxuries to honey-gathering and pollen-collecting insects. It is during the early fall season that they add their quota to the beauty of American scenery by their brilliant red berries. These change during October to a shining black, or, as some of the books say, to a dark purple. In this condition they remain till the end of November, or later if severe weather be postponed. Though it is not uncommon in the lowlands of the southern portion of the Union, it is chiefly at home in the mountains of North Carolina and Tennessee, especially among the broken rocks in the higher elevations. The leaves turn to a brilliant orange brown, making a striking contrast with its dark, shining fruit. These leaves, by the way, cling to their parent stems long after other foliage has fallen. Indeed, in some sheltered situations it is almost an evergreen. There is not much variation in the plant in connection with its geographical distribution. The one the most noted is that in the mountain regions it has the fruit more clustered at the ends of the branches than in the lowland sections, as in our illustration.

EXPLANATION OF THE PLATE.—A Virginian specimen, taken at the end of October.

Prepared by THOMAS MEEHAN.

an intelligent provision of Nature to prevent crowding. Between these leaves, the delightful, fragrant, white, cup-like flower nods, completely hidden by the "umbrella" overhead. The flower in spring is followed by a globular, green seed-vessel. It belongs to the family of berberries.

THE WOOLLY SWEET CICELY.—It is quite a pleasure to the woodland stroller to run across the Sweet Cicely, even if the gratification be no more than to pluck a handful of the leaves and growth to get the delightful licorice odor. The Woolly Sweet Cicely is quickly detected, especially in its younger stages, by the woolly stems. These stems are clothed with silky white hairs that are quite conspicuous when one looks at the plant from a vertical position.

TREE-PLANTING IN GAME PRESERVES.—Interest in the preservation of game animals is evinced in many quarters to such an extent that steps are taken to provide them semi-natural shelter where it may be lacking. The Scrub Oak is admirable for deer and smaller game. Birds, also, receive encouragement at the hands of the interested sportsmen. Not only are they given similar opportunity for shelter and nesting, but trees are planted out for furnishing berries for which they show fondness. The "Bird Cherries" are foremost in value for this purpose. They grow and fruit quickly, producing very large crops. The European Bird Cherry, *Cerasus Padus*, is extensively planted for ornamental purposes on lawns. Not only the flowers are ornamental, but the "strings" of red and black fruit as well. The birds are marvellously quick in expressing by their action their great liking for the cherry named in their honor.

INJURED LEAVES IN AN APPLE-TREE.—I have a mysterious freak in a seedling apple-tree, 4½ feet high, and the stem is one-half an inch in diameter. As usual, it leaved out in the spring, and early in June I was passing the tree and, to my astonishment, I found every leaf *dead*, to all appearances.

I came near pulling it up, but did not A few weeks later, the dry leaves seemed to remain on the tree, while new leaves were starting out low down, and, slowly, the tree was wholly (save six inches at the top) new-leaved, and the old leaves still remained on the tree. The two leaves sent with this I picked off this day, the 25th of July, 1901, from the same branch. You have a specimen of both crops.

TIMOTHY WHEELER.

Moscow, Vt.

[The leaves could not be found. In opening the letter they must have fallen out and blown away. Unfortunately, there is no way of deciding the case without seeing the results. In some plants, a small beetle will bore a leaf-stalk or the apex of a shoot, and it dies just as these are described to have done.

Very often a close examination, especially with a good lens in hand, will show up the cause of these disasters pretty well.—ED.]

THE RATTLESNAKE WEED.—In the dry woods of New England and the central States, the Rattlesnake Weed (*Hieracium venosum*) is common, and is easily found through the marking of the leaves. The leaves are mostly from the base, and the veins are made prominent on the upper surface by reddish-brown marks on green ground. After mid-summer, the yellow, composite flowers appear.

A POPULAR COURSE IN BOTANY.—It has been widely spread amongst the papers that the Editor of MEEHANS' MONTHLY, with an accomplished assistant, is engaged in the botanical instruction of a class of young men who are horticultural enthusiasts. One of the Massachusetts readers of the publication observing the fact is likewise enthused, and desires the course published in these columns for the benefit of others, all of which would be gladly done if it is found enough other readers would probably care to have such a subject regularly treated. The Editor does not claim to be a botanist, but would endeavor to arrange a course that would likely prove interesting, treated in a popular way and comprehensive to amateur students. Remarks on the subject are invited.

LARCH TREES.—Wordsworth's well-known dislike of the larch seems to me most unreasonable. A great part of the lake region is by no means too well wooded; and to my mind the rather common larches of that district are by no means an unpleasant feature.

C. W. GREENE.

GENERAL GARDENING.

CHILDHOOD'S VIOLETS.

Why better than the Lady-rose
  Love I this little flower?
Because its purple leaves were those
  I loved in childhood's hour.

My heart's world has been long o'erthrown;
  It is no more of flowers;
Their bloom is past: their breath is flown;
  Yet I recall those hours

Let nature spread her loveliest
  By spring or summer nurst;
Yet still I love the Violet best,
  Because——I loved it first.

LETITIA E. LANDON.

THE RECENT FAILURES OF WHITE BIRCHES.—Can the Editor tell me what has been the cause of so many of the White Birches dying during the last year? Two out of three of mine died during the summer and autumn. They were about twelve inches in diameter, growing on the lawn for sixteen years, and until they sickened had always looked fine and healthy. S. B. B.

[If you will glance through the back numbers of MEEHANS' MONTHLY of the two volumes just preceding, you will find a number of articles in relation to the death of the White Birches. It has been attributed both to the borer and to a disease, yet just which is the most serious cause and real destruction to trees has not been finally decided. The matter will be under further investigation this summer, and will be treated in a future issue of the MONTHLY. Other observations from correspondents will be helpful towards the desired end.—ED.]

KEEPING DOWN WEEDS.—The matter of keeping down weeds in drives, walks and gutters, was thoroughly discussed at the meeting of the Association of Cemetery Superintendents, in Pittsburg, Pa., last summer (1901). Several stated that the commercial preparations widely advertised did the business, but were too expensive to use on the large scale demanded in cemeteries. Several had used solutions of caustic soda with good results. One gentleman said it cost him 3½ cents per lb. by the barrel. He applied it dry in a fine powder just before a rain, but it might be applied in a solution of water. In the latter case it should be used in clear weather when there were no indications of rain for several hours. When used in solution, he dissolved 10 lb. of soda in 50 gallons of water and applied enough to reach the roots. Another gentleman used 8 lb. of caustic soda and 4 lb. of arsenic dissolved in 8 gallons of hot water. This was diluted with 50 gallons of water. He had experimented with nitrate of soda as a fertilizer on lawns, and in applying 50 gallons of water containing in solution 25 lb. of nitrate, had apparently destroyed his lawn, but the grass started afresh soon after and grew luxuriantly. However, the dandelions and some other weeds were killed, and never appeared until new seed germinated. He thought the same quantity of nitrate in 100 gallons of water would be effective. Did not give area sprinkled.

A SPRAYING TOWER FOR TALL TREES.—That spraying of trees for destruction of insect pests and spores of disease has beneficial results, is made evident by the demand for improved machinery and appliances used for such purposes. The Deming Co., of Salem, O., have a particularly useful apparatus—an adjustable spraying tower, designed for spraying tall shade trees. By means of a crank and worm-gear, connected to a suitable cable, the telescoping sections may be elevated or lowered as desired, so there is no difficulty in spraying all parts of a tree 60 to 70 feet in height. It swings readily down to the ground. A gasoline engine is the most practical means for operating it.

THE PIN OAK AS A LAWN SPECIMEN.—The illustration on next page shows a rather pretty home scene, but it is largely for the beautiful Pin Oak to the left that it is presented. Those who know well the merits of the Pin

Oak scarcely cease their praises of it for almost any purpose. That it is capable of taking on beautiful proportions is to be seen in the illustration. Observe the lines of shadow as they indicate a downward sweep of the lower branches, which form a lovely, shady retreat Unlike most deciduous trees, the lowest branches are usually the longest, forming a conical outline.

AMATEUR LANDSCAPE GARDENING.— Landscape gardening is a source of the highest pleasure to those who patronize it. Those who hold pleasure to be the result of mere accident, do landscape gardening a great injustice. Pleasure is the result of laws as fixed as those which produce heat and light, rest or motion.

A BEAUTIFUL SPECIMEN PIN OAK.

So, the more clearly the true principles of landscape gardening are understood, the more perfectly are we enabled to know how they can be applied to the production of the highest degree of pleasure the art can afford.

Extensive gardens are being formed everywhere. The fund of pleasure their originators are laying up for themselves will be great. That fund would be infinitesimally greater if more definite ideas of the sources of pleasure in gardening existed.

Were every one born an artist, any one might justly deem himself capable of laying out his own place in a manner capable of affording ultimately the highest pleasure; but it is not so.

It is often said that every man derives most pleasure from "doing what he likes with his own." Any man might feel some pleasure in deciding to cut with his own hand a "Greek Slave" in a block of marble,—but I guess that a more real, a more lasting, and more substantial pleasure would ensue from the employment of the life-giving chisel of a high artist like Hiram Powers on the senseless block.

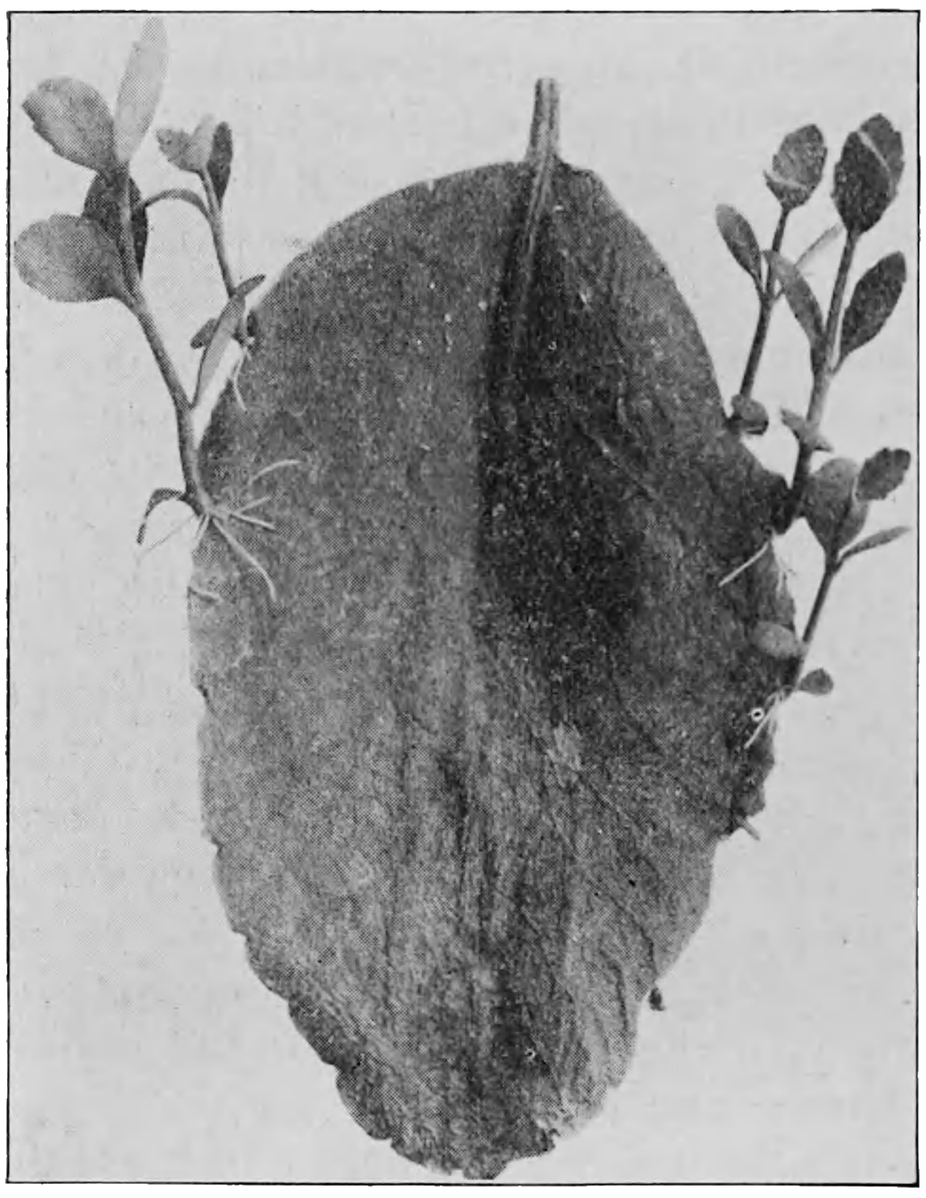
I am ashamed to make the comparison. It is ridiculous. Applied to landscape gardening it is more so. It is the work of a higher order of genius to create a pleasing landscape in its generalities, and in its details, than to form a piece of sculpture of ordinary merit. Genius does not rule so proudly in poetry or music, drawing or painting, as she does in the art of landscape gardening. All other arts are content to imitate or represent nature—but landscape gardening has often to employ in her efforts the aid of all other arts, and often to create even the very materials out of which she produces her happiest results. Could any produce an equal to the beautiful landscape paintings of Claude Lorraine? If this be difficult, how much more difficult the aim of the landscape gardener, who has to produce in nature the superiors of the picture? It is difficult to arrange the scenes in a landscape painting so as to give expression, character and harmony to each with the other,—but it is more difficult to arrange these in nature. In a picture, scenes, rarely corresponding, yet beautiful in their correspondence, can be brought and conjoined together with a fascinating effect.

The imagination often, indeed, supplies the place of realities. The landscape gardener has a more difficult task. He, too, must bring together, harmoniously and expressively, scenes too beautiful to be often seen in one whole, naturally. His imagination, too, must play, but far more cautiously than that of the painter—because he has a higher and sterner tribunal to decide the value of his work than

succulent shrubby plant, a native of the Moluccas, with quinnate, or almost pinnate leaves, oblong, deeply crenulated leaflets, and panicles of large, greenish-yellow flowers, is not unfrequent in British hothouses, being regarded as an object of interest, upon account of its producing buds on the edges of the leaves more frequently than almost any other plant. These buds are capable of forming independent plants," etc.

The same authority says: "The curious mode of propagation is found also in the Bog Orchis, *Malaxis paludosa*, a plant of a very different natural order."

San Diego, Cal. MRS. E. E. ORCUTT.



ADVENTITIOUS GROWTH FROM A BRYOPHYLLUM LEAF.

[The *Bryophyllum* is indeed an interesting plant in this particular character of rooting from the leaves. The roots will frequently appear while the leaves are yet attached to the plant. The Editor has a plant of it in his dwelling that is at present in full flower. It has a large truss of the pale, greenish, oblong flowers, adding very largely to its attractiveness. Our correspondent's little plants will doubtless grow still more rapidly and uniformly if the leaf be divided so each may have a fair share of the sustenance the leaf will give them. The illustration is shown by courtesy of Prof. Green.—ED.]

NEW OR RARE PLANTS.

THE PERSIAN LILAC.—In fragrance and general beauty the Persian Lilac may be considered the equal of the ordinary garden varieties; but it is not so well adapted for cut-flower purposes—one of the chief charms of the old-fashioned lilac. Cut and placed promptly in water, the Persians last but a short time.

The white Persian Lilac is not considered as pretty as the purple. Occasionally it runs back to the purple. Both make handsome, symmetrical bushes and are very floriferous.

THE SINGLE-FLOWERED CORCHORUS.—The double-flowered *Corchorus* (or *Kerria*) *Japonica* is a very popular plant, but the single-flowered one, the parent plant, is quite uncommon. Perhaps the double is most pleasing to the average person, yet the single is well liked by those who know of it.

THE PHILADELPHIA RAMBLER ROSE.—A new Crimson Rambler rose has been sent out under the name of Philadelphia. It is almost identical with its parent, but the flower is slightly improved by being more double. The foliage is claimed to be better and less subject to mildew, but this is something that should be put to stronger test before the assertion has weight. Introduced by the Dingee & Conard Co., West Grove, Pa.

THE NEW DEUTZIA GRACILIS ROSEA.—Every one knows the shrub *Deutzia gracilis*, and but few shrub collections do not contain it. A variation is among recent introductions, the difference lying in the flowers, which are daintily tinged rose on the outside of the petals. It is a charming flower and will be warmly welcomed. The color may not hold when the flowers are forced in greenhouses. Has it been put to test by any of our readers?

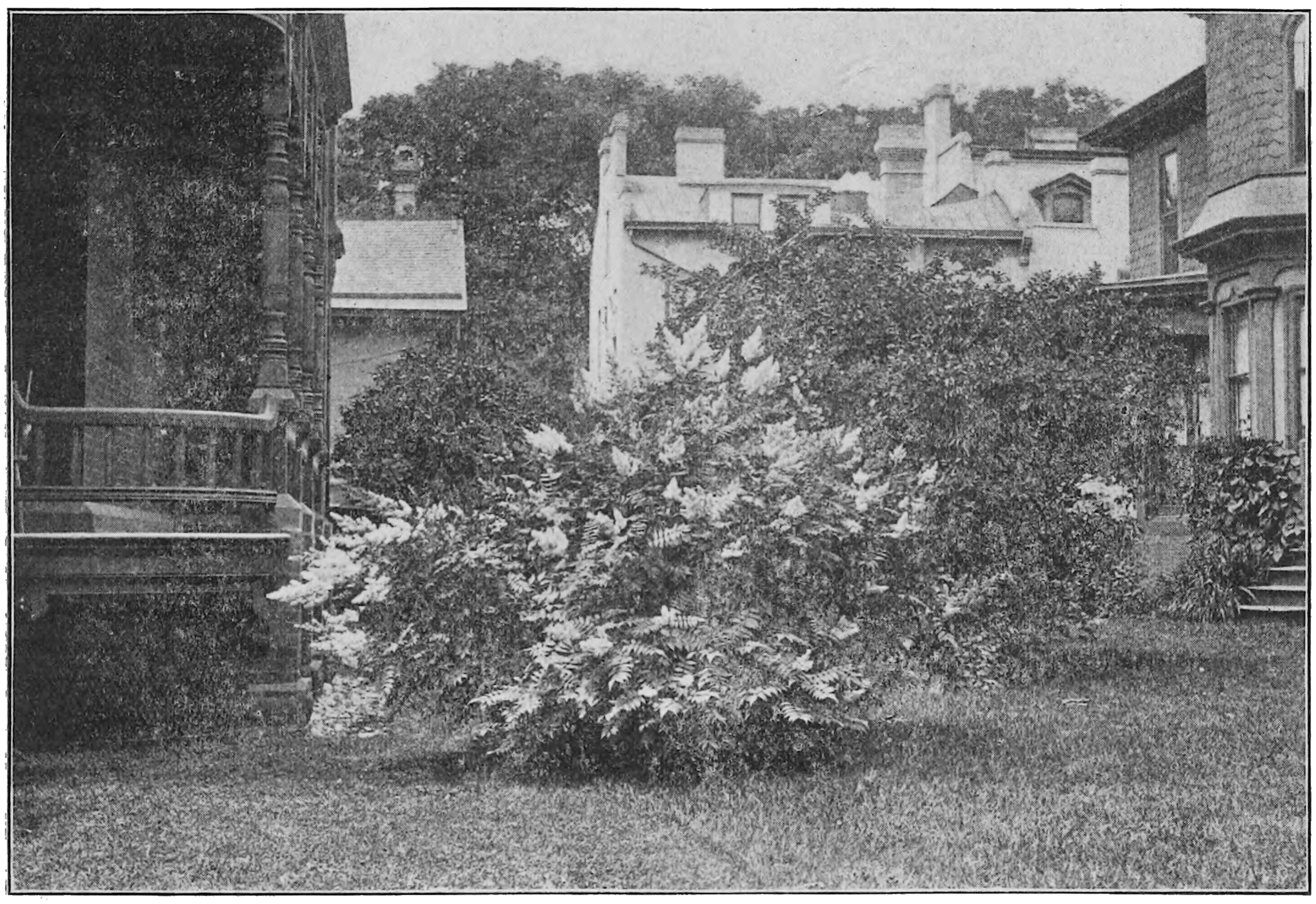
SPIRÆA SORBIFOLIA.—The Ash-leaved Spiræa, *S. sorbifolia*, is a valuable plant, though its merits are but little known, and its use is almost limited to cultivators who plant very largely. One of the best claims for it lies in the fact that it rather enjoys a little shade; and the shade problem is one that gives considerable annoyance to the average gardener.

As its name implies, *S. sorbifolia* has a pin-

nate leaf,—or is ash-leaved, as popularly described,—and this character largely identifies it in a special class of Spiræas. Indeed, from the leaf very few persons would recognize its generic claim, and in fact some authorities call it *Sorbaria sorbifolia*. Its white flowers are borne in large, showy, terminal panicles, more open than other Spiræas that produce panicles. *S. Lindleyana* is nearly identical in foliage and flower with our subject, but grows a little taller and is less hardy. *Sorbifolia* is by far the best of the two.

Pinnate leaves usually unfold from the buds very quickly in spring, and those of our Spiræa are no exception. They are extremely precocions, and perhaps precede the leaves of all other deciduous plants. The sight of these leaves unfolding almost before winter is closed is an interesting one.

The illustration is produced by courtesy of Mr. C. B. Whitnall, Milwaukee, Wis.



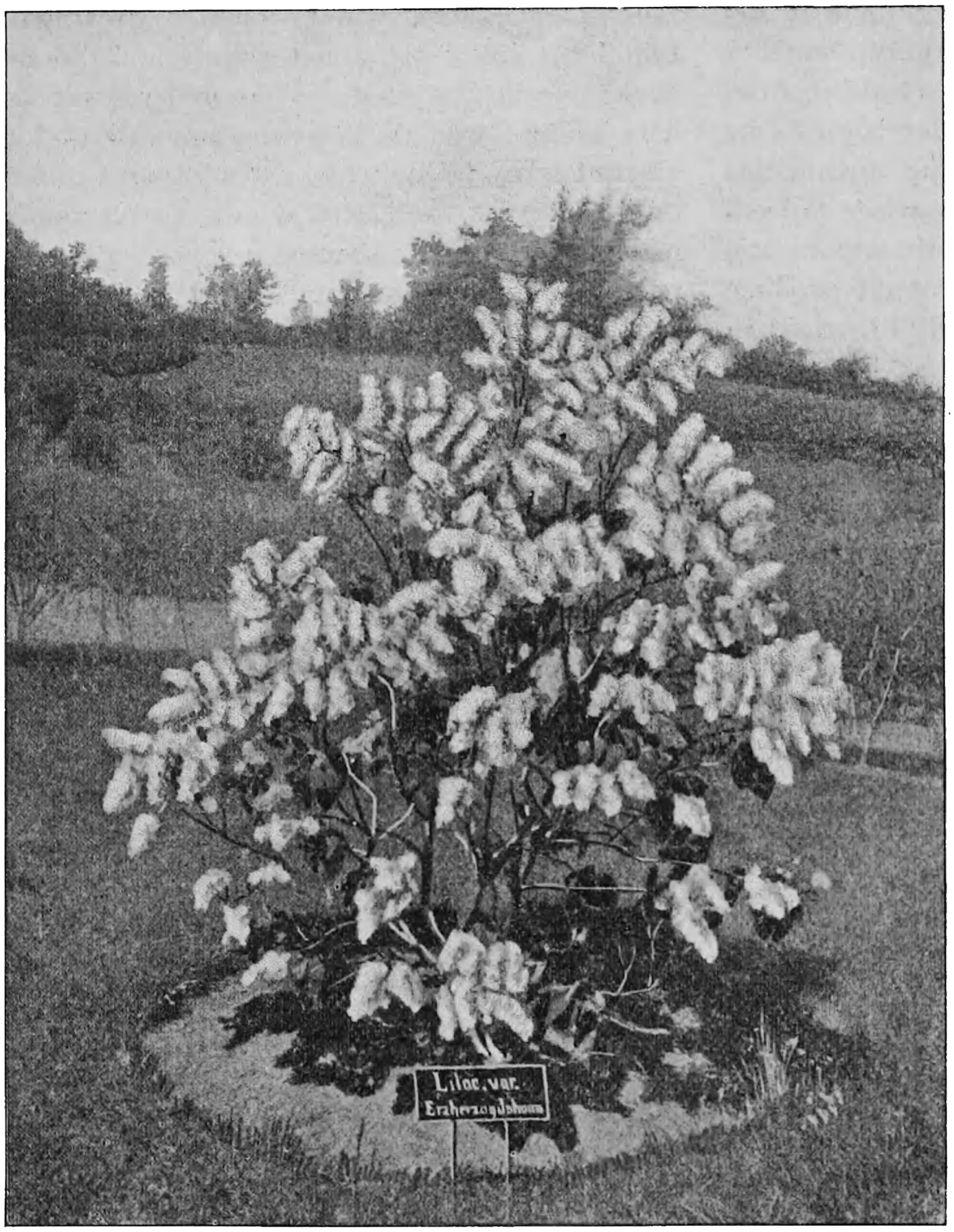
SPIRÆA SORBIFOLIA, ASH-LEAVED SPIRÆA.

THE HARDY FLOWER GARDEN.

AYRSHIRE CLUSTER ROSE.—Some years ago my father had, in his garden in Rhode Island, a beautiful climbing rose, then known as the Ayrshire Cluster, which usually grew with two long, intensely green wands and did not sucker from the root, as so many roses do. The foliage was dark green, smooth and of elegant form. I never knew any insect to feed on the leaves, and the whole shrub-stem, leaves and flowers—seemed free from all insect pests. The blossoms were double, of medium size, clear white, with a delicate fragrance. They grew in a spray-like cluster some 15 to 20 in number These clusters were numerous and made with the beautiful leaves an exquisite climber. The season of blossoming began about the first of July and continued for a long time. This was always a choice variety and never became common. I never meet with it now and do not find the old name in any of the catalogues. Has it been lost, or is it sold under another name? I would be glad to find it again. (MRS.) M. K. H.

Lebanon Springs, N. Y.

[The Editor does not think this old rose has been changed in name, but that like many worthy plants it has been lost sight of in the popular rush for new varieties. As a rule, nurserymen and florists, like all business houses, must largely cater to the wants of the



A SHOWY LILAC.

public. The people want novelties, which sell best and quickly and are therefore genera ly more profitable. No doubt some grower clinging to the plants he loves rather than to what others want will have a few of these plants in some corner of his grounds.—ED.]

IMPROVEMENT IN THE LILAC.—It is an undisputed fact that the zeal of hybridizers is often the means of giving to the public a host of varieties differing so slightly, many of them, as to be of little worth and rather a source of confusion to purchasers. The lilac is an instance of this point, and a large number of its varieties are worthless as such. A few have double flowers, a fact that may be attractive to many persons, yet which in reality does not give satisfaction in all cases.

Highland Park, Rochester, N. Y., contains a large collection of lilacs, offering an object lesson for the selection of the choicest kinds. From this collection we are enabled, by the courtesy of the *Municipal Journal and Engineer*, to display two showy varieties, "Erzherzog Johann" and "Louis Van Houtte," the latter a dark red color, and much sought and liked. "Rubra insignis" has very dark red flowers in the bud. "Alba grandiflora" is a handsome white, large truss.

CULTIVATING FLOWER BEDS.—The general gardening public does not always recognize that cultivation of the soil is not alone for the purpose of keeping down weeds and giving a good appearance to the beds. Farmers harrow their corn and potatoes when there is not a sign of weeds. Why? It keeps the soil in a better condition for receiving and retaining moisture; it aërates the soil, which is essential to the decomposition of plant food it contains. Especially is cultivation necessary around young and recently transplanted plants. The difference between the growth of cultivated plants and those not so treated is often remarkable and favors the former method.

The manner of cultivation is important. Some men will use the hoe so that the top layer of soil is cut off clean and gathered up with the weeds that may have been the chief object of the hoeing. The surface remaining will be hard and smooth—quite the reverse to what it should be. Cultivation should mean a stirring of the surface, making it fine. If this be done in loamy soil shortly after a rain, it will not break into large lumps.

IRISES.—The Iris has been very aptly termed "the poor man's orchid," and no class of plants is more interesting or beautiful. The acquirement of a complete, growing collection would be a fascinating hobby either for the

garden l'' Take in the beauty and naturalness of the accompanying scene where the woodland breaks on a well-kept lawn in undulating waves. Nothing could be more in place than a margin of rocks covered with trailing vines and flowering plants. How simple is the arrangement, yet so full of charm!

All plants will not thrive in a rock garden. They must needs be able to stand lack of more or less moisture Yet there are many plants well pleased with such a place where they may revel over the rocks at will, rooting in crevices and in the shallow soil. A few were mentioned in connection with the notes on *Phlox subulata*, referred to above; but many more could be added.

Will those of our readers interested in the subject write concerning some particularly desirable plants for the purpose, and of effective arrangement?

FRUITS AND VEGETABLES.

TRAINING LIMA BEANS ON STRINGS.—The old-time bean pole has been discarded by some vegetable gardeners to be replaced by strings. Two stout poles are placed at either end of the row with a crosspiece from top to top to support the vertical strings. The vines seem to climb just as well, and grow more luxuriantly thus spread, receiving more light and circulation.

QUALITY OF PAPAW FRUIT.—In Joseph Meehan's notes on the papaw in *Florists' Exchange*, February 15, 1902, he mentions that the fruit measured three inches in length and one in thickness, but was of unpleasant flavor. Now, I have been familiar with the papaw all my life, and gathered them when a boy in large quantities for eating.

Our manner of judging the flavor was by color and taste. In going to a papaw patch, we sought for the large, yellow varieties first, and when found tasted them to judge as to flavor.

I have seen them (if my memory serves me correctly) fully as large as the ones mentioned in his notes, of fine quality, but these were rare, the medium sizes (1½ inches thick and 4 to 6 inches long) being as a rule the best.

There is another variety equally as plentiful, but the fruit never attains that rich, yellow color, but is greenish-white when broken open, and the taste insipid and slightly astringent. As to general appearance of the plant, I was never able to distinguish any outward difference in tree or foliage, both answering to Gray's description. But the wood or inner part of the two varieties bears a marked difference. That of the finer flavored fruit is apt to be fresh and having a yellow tint toward the centre, while the other is apt to be almost white to the centre and of tougher quality.

These trees I have seen frequently grown singly and in pairs in yards, but never saw them fruit under such circumstances. Even in the forests, where not in cluster, they are almost invariably fruitless The specimens I mention were shapely shrubs 12 to 15 feet high, and made quite a handsome appearance with their large, glossy-green leaves.

The papaw at one time was to be found in large quantities all over southern Indiana, but is disappearing with the forests.. I have been told that at one time they were so plentiful at Pataka, some thirty miles north from Evansville, where there were some large whisky distilleries, that the farmers gathered papaws by the wagon-load certain seasons when there was an unusually large crop, and had them distilled into whisky.

My judgment is that, to get the better-flavored varieties, one would have to select the seed, and, to get fruit, grow them in groups of a dozen or more, and, better still, among forest trees where they would have the protection of the shade and soil on which the leaves were allowed to accumulate each season.

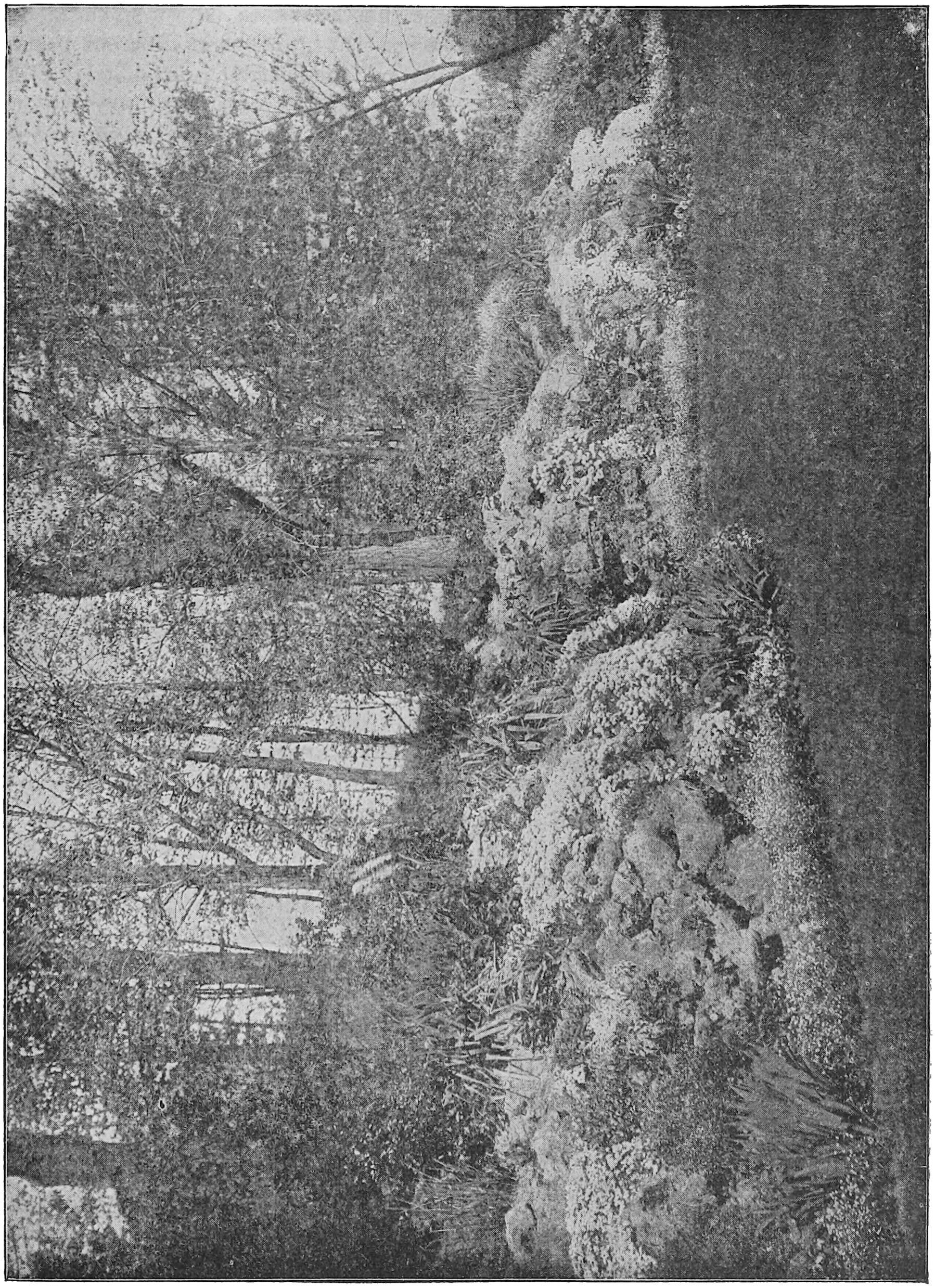
I have noticed that a single plant in an exposed position grows more compact with a well-rounded crown, while those growing in the forest were apt to have the crown or branches all on one side and far apart, thus giving a beautiful illustration of Nature adapting herself to natural and unnatural conditions or changed conditions.

Evansville, Ind. WM. HALBROOKS.

The sizes mentioned in the foregoing are approximate.

RUBUS CANADENSIS—THE DEWBERRY.—There are two cultivated varieties of the dewberry; one is the Lucretia, the other the Mammoth. This latter plant I grow, and sell the fruit in the local markets near me. It ripens

at the same time as the Early Harvest Blackberry, and in size of fruit nearly three times as large. It is a firm, very large, glossy-black berry, with large grains, carries well to market, and outsells the Early Harvest right along. The latter cannot compete with it at all. But there is a strong objection to the Mammoth Dewberry on account of its trailing habit. There are few gardeners who care to take the trouble of trellising it. This is the proper method—braced posts at the ends with intermediate stakes between, twelve feet apart, and No. 14 wire stapled to the posts, three or four strands. Then the thorny vines, cut back to four feet, are tied on vertically to the wires. About gathering time, the new growth should



A ROCK GARDEN. SEE PAGE 95.

be cut back, so as to get the rampant growth out of the way for easy picking. After the picking, cover the ground around the wires with leaves, straw or hay, and let them go and grow to suit themselves. In the following February, prune to straight stem, leave the clippings on the ground where they fall, and tie to the wires again. It is easy enough when understood. Keep plenty of straw, leaves or hay on the ground winter and summer; there is no cultivation necessary, but pull up occasional weeds. Blackberries never sell for over ten cents in this market at their highest price, and the Mammoth passes generally as a very large blackberry, and sells right along at ten cents for the season. So far, I have not been able to supply the demand. F. K. STEELE.

IMPROVING THE QUALITY OF POTATOES.—The flowering of potatoes has been found by M. Michelet to withdraw much starch from the tubers, and experiments in France have convinced him that the product of the plants may be improved by removing all blossoms.—*North American Horticulturist.*

POT MARJORAM, ORIGANUM VULGARE.–A Philadelphia correspondent sends the following: "Enclosed find a specimen of a plant raised from seed which we purchased as *Origanum vulgare* or French Marjoram. This seed we sent to a correspondent in Mexico, who sends us the plant, asking if it is really *Origanum vulgare*. If not, he wants to know its proper name. In his letter, he states that the Mexican variety is greatly esteemed for cooking purposes, and that while it is readily propagated by division and by cuttings, it does not seem to give seed. His plants bloomed freely last year, but did not produce a solitary seed."

The specimen sent has every appearance of being the true *Origanum vulgare*. The leaves are a trifle smaller than some that may be frequently seen on this species, but it may be that the larger leaves would develop as the plant became stronger.

No cause can be attributed for the plant not producing seed. It is so readily propagated by division that there would seem little necessity for bothering with the seeds.

Just what is intended by the "Mexican variety" is not evident, as none are credited to that country. *O. vulgare* is the well-known Pot Marjoram, and is indigenous in Pennsylvania and northeastern States as well as in Europe.

FIRE-BLIGHT IN THE PEAR.—I have a pear-tree that seems to be in splendid condition except that branches in different parts (which I cut off and destroy immediately) seem to act as if broken; leaves turn brownish-black and wood and fruit wither. Can you tell me what the trouble is and suggest a remedy?

Oak Lane, Phila. J. M. C.

[From your description it is certain that your pear-tree has what is known as Fire-blight. Your treatment is really the very best thing you can do for this, though we would advise you in taking off the limbs to cut them even below where they seem to be affected. There is no sure remedy for this Blight, as it cannot always be reached by spraying or other outside applications. By promptly cutting off each branch which appears to be the least bit affected, you will possibly save your tree. Bordeaux Mixture is a good fungicide, and might have effect in certain respects by at least keeping the tree free from other diseases and giving strength to resist attacks of any nature.—ED.]

FRUIT OF THE MAHALEB CHERRY.—In connection with the raising of cherry trees, as a stock on which popular varieties are budded, the European Mahaleb Cherry is pretty well known in the United States; but as a fruiting tree it is a perfect stranger to almost every person. Possibly nothing but accident—a scion lost or a stray seed—permits a plant to grow to a fruiting stage The fruit is dark black, extremely small, and borne very abundantly on the trees. Even with its plentifulness, the picking would prove tedious after being accustomed to larger fruit. It is of comparatively dwarf growth, and seems to thrive best in rather heavy soil, and is most in favor as a stock for planting in the central States. It is nearly always used for sour varieties.

TARRAGON LEAVES.—The green tarragon leaves that are a valuable addition to most salads, are easily kept at hand all winter, and in a pot on a sunny window-ledge —*New York Post.*

"To-morrow I expect to be 84 years old. This is *my* old garden where seven generations have toiled in field or garden, or enjoyed its fruits; and the thoughts come from a daughter far away on the Pacific coast. Words fail to express my feelings." T. S. G.

A BOTANY of ALL KNOWN PLANTS.—A. Engler proposes to publish, with the aid of the botanists of the world, a description of all known species of plants. If this work is carried to completion it will probably contain a greater number of volumes than any botanical work ever published.

—*Country Life in America.*

GENERAL NOTES.

MAKING WALKING-STICKS. — The United States alone furnishes as great a variety of woods for walking-sticks and umbrella handles as all other countries combined, excepting, of course, mahogany, rosewood, sandal, and other products of the tropics. China, Japan, and the East Indies furnish bamboo, which probably is the most popular of all wood.

Straightening sticks, in a domestic way, is done by tying a heavy weight to the lower end, and a rope or strong cord to the head, and lowering the stick in a well or pool of water deep enough to cover it; even a hogshead of water will answer for a dozen sticks at a time. When perfectly straight, lay them to dry, when the final polishing with sand-paper, linseed oil applied with a woolen cloth, and, last of all, a coat of alcohol-shellac will bring out the natural beauty of the wood. Undressed sticks are brought across the ocean tied to the rear and lower parts of vessels. They drag or trail in the salt water, and are made hard and as straight as an arrow by the continued resistance against the water. MRS. G. F. DRENNAN,

In *Vick's Family Magazine.*

GREENHOUSES ILLUSTRATED.—Just as at times actions speak louder than words, so may pictures reveal more to our minds than words. This thought is brought into prominence by the many beautifully and accurately illustrated catalogues that merchants now send out. Those from half-tone cuts are particularly instructive, because it is realized they are very near reproductions of the natural object. Many such might worthily be cited as examples, but just before the writer is the catalogue of the Lord & Burnham Co., horticultural architects and builders, and it is a perfect subject to illustrate this desirable feature. Almost its entire composition is of beautiful half-tones, showing the many styles of greenhouses and conservatories in actual use. They represent interiors and exteriors, and are alone instructive to any one having the slightest interest in such matters.

NIPA.—It is well known that the palm-like *Nipa* tree, of tropical Asia, has a sap exceedingly rich in sugar; but so salty that its utilization has not been found profitable. Why could not this sap be fermented and used as a source of alcohol? C. W. G.

BIRD'S-EYE MAPLE.—Referring to the article in the April MONTHLY, in which the production of Bird's-eye Maple is described and illustrated, Mr. W. F. Bassett, of Hammonton, N. J., questions that the manner of cutting should have anything to do with it, but that rather it is a natural production. The author of the notes referred to did not intend to convey the idea that the manner of cutting was the primary cause, but that it brought out the beauty of the grain.

Mr. Butler makes his own explanation as follows: "The bird's-eye figure in maple is of course a natural production, but by cutting the timber in the ordinary way, that is, lengthwise, we get in the centre of the board a clear figure of the bird's-eye, but each side of the centre a blurred or distorted figure, because the grain there is cut at oblique angles. Whereas by the mode of cutting around the timber the grain is always cut at a right-angle, and in every part of the veneer the figure is distinct."

WHITE BLUEBERRIES.—White or pinkish blueberries, instead of the usual deep blue colored ones, are not uncommon in certain localities. In some cases these are simply albino forms; in others the color is due to a fungous growth. In the gardens of the Maine Experiment Station some of the albino forms are now fruiting, and, aside from the color, they are perfectly normal.

Erigeron Philadelphicus.

not gone further than appropriation of the name, though the thought is occasionally apparent. As the type of chivalrous daring, and the pattern of patient endurance, Richard Realfe, the really great poet who penned his own obituary in California the day before suicide, had no doubt the English daisy in mind when he wrote :

"He was a-weary, but he forgot his fight,
And stood for simple manhood, and was joyed
To see the august broadening of the light
And new earth's heaving heavenward from the void.
He loved his fellows, and their love was sweet—
Plant daisies at his head, and at his feet."

Still another suggestive sentiment may be referred to here. Some metaphysician has said there is but a slight step from the sublime to the ridiculous, which may be enlarged a step between the plain and the beautiful. The different species of fleabane that we see everywhere about us and are closely related to this, are in no way attractive, but here is one that is often confused with them, that we believe art lovers will say is beautiful. We have had few pictures that will give more pleasure to the connoisseur.

The botanical history of our plant is somewhat obscure from the mixing up of species and forms as already noted. Linnæus seems to have had his first knowledge of it from Peter Kalm, who found it in "Canada," and it was given the name it bears in his "Species Plantarum." One species extensively taken for it by Michaux, Elliott, DeCandolle and others, Dr. Gray decides to be the *Erigeron quercifolius* of Lamarck. This cuts off the territory sometimes given to our plant by "South Carolina to Florida and Texas." To *Erigeron Philadelphicus* proper is credited "moist fields and border of woodlands, Hudson's Bay to Florida, Texas, California and British Columbia." Dr. McMillan does not record it among his Minnesota plants, Henry Gilman in the second volume of "The American Naturalist," page 65, notes the finding of a pure white variety in that state. The author has collected what appeared to be the species in a dried-up condition in Montana in August, and in the Bot. Gazette, 1st vol. p. 104, what appears to be our plant is recorded from Arkansas. Pursh, in the journal of his trip to the Northern Lakes, notes it as abundant about the Delaware Water Gap. Our medical journals exhibit great confusion in regard to it. Dr. Barton, in his "Flora Medica," has a long account of its medical virtues, but figures one that may be intended for either *E. annus* or *E. annuus* for the one he is praising. Singularly enough, Rafinesque gives a reduced picture of this very cut for *Erigeron Philadelphicus* in his Medical Botany, and his account of its uses in medicine is evidently made up in the main part from what Dr. Barton says of it, with a few additional items of his own. Dr. Peyre Porcher, in his "Resources of the Southern Fields and Forests," is evidently following Dr. Barton's error, but he states that *Erigeron Philadelphicus* is known by the name of Frost-weed in the South. The Indian name of "Squaw-weed" is also applied to *Erigeron Philadelphicus*, but it is doubtful whether this is the species used by the Indians as a female medicine. Either this or some allied species still has a good reputation in pharmacy in connection with kidney diseases.

The production of this plate calls up that of *Erigeron speciosus*, which was issued in MEEHANS' MONTHLY, No. 7, Vol. X., and the reader will find some additional interest in bringing the two into comparison. Observance of the very narrow and numerous rays will serve to fix in mind a characteristic common to this genus. Many persons not hitherto familiar with plants of this order will discover a member of the family in a very common "weed" widely distributed, *Erigeron bellidifolius*, and the characteristic rays are even more like our present subject than those of *E. speciosus*, though pure white in color. The novice is prone to first classify Erigerons amongst Asters,—*speciosus*, especially, closely resembles an Aster known as *Alpinus;* but the numerous and closely set rays of the former prevail in proving its true identity. For comparison of these points, also turn to the plate of *Aster concolor*, Plate II., same vol.

The coloring in the rays of *E. Philadelphicus* is so markedly delicate and attractive, some attempt has been made to introduce it to cultivation, but without much success.

EXPLANATION OF THE PLATE.—1 Upper portion of a Pacific Coast specimen. 2. Lower portion of a stem, showing better the downy character. 3. Enlarged flower, showing the single pappus; many allied species having a double.

Prepared by THOMAS MEEHAN.

WILD FLOWERS AND NATURE.

THE COMING STORM.

The day is lowering—stilly black
Sleeps the grim wave, while heaven's rack,
Dispers'd and wild, 'twixt earth and sky
Hangs like a shatter'd canopy!
There's not a cloud in that blue plain
  But tells of storm to come or past;
Here, flying loosely as the mane
  Of a young war-horse in the blast;
There, roll'd in masses dark and swelling,
As proud to be the thunder's dwelling!
Whilst some, already burst and riven,
Seem melting down the verge of heaven;
As though the infant storm had rent
  The mighty womb that gave him birth,
And, having swept the firmament,
  Was now in fierce career for earth.
On earth 'twas yet all calm around,
A pulseless silence, dread, profound,
More awful than the tempest's sound.

THOMAS MOORE.

BIRDS AND FLOWERS.—A person who observes learns much. He uses his eyes and the eye of the mind on all things which go on around. Regarding the Tiger Lily, who would suppose that the nectaries would be found on the surface of the sepals and petals, thereby throwing the insect or humming-bird to the rear and away from the long filaments of the stamens, thus showing that the insects were not wanted to fertilize the blossoms; and yet I have never met with a seed pod of the Tiger Lily. Their independence is to their own seeming loss. Seeming loss? Just look at the small bulbs which are chasing each other up the tall stalks, and every one of them will grow and make a plant. Possibly the fructification is like unto the modest violet—hidden away—cleistogene—and the little bulbs are, in reality, the seed. Or maybe nature considers that the bulbs are enough for the plant to produce; yet how can we obtain a cross unless seed is produced? We cannot get a cross from the bulblets. I was watching a humming-bird hovering over a lily. I saw it push its bill into or above the petal. Each one, sepal and petal. I noticed its point hidden for an instant, then withdrawn, and then on to the next. When the bird left, I pulled a blossom and subjected the petal or sepal to the power of the magnifying glass. Then I saw the tube. Pulling the petal apart lengthwise, I saw the hidden honey. Where did the humming-bird obtain its knowledge of this store of honey? Who taught the bumblebee how to open the mouths of the Snapdragon so that it could enter in and gather the nectar within? Is it instinct, or is it knowledge, or horse-sense—brain work? In the tubes of the honeysuckle, or rather in their outsides near the base, the bumblebee cuts a slit, through which its sucking-tube is thrust and the honey reached, and following them, the honey-bee does likewise, but does not slit the tube. F. K. STEELE.

WOODRUFF, OR WALDMEISTER.—There has been considerable discussion in the newspapers as to whether the true Woodruff, *Asperula odorata*, grows in America. It is said to have been found in Staten Island, in New Jersey, and in Fairmount Park, Philadelphia. But if so, I think it must have come from imported seeds. A friend of mine, in Massachusetts, got the seed from England, and now has a fine patch of it growing. C. W. G.

LEAF-CUTTING BY INSECTS.—I send three leaves (see illustration) that have been edge-cut by some insect. This cutting is generally placed to the credit of the wasp, but I do not think it so in this case. Wasps do not fly far from home, and in three days' tramping in the locality I did not see one

The strange thing about the cutting is one large cut, or perhaps two cuts merged in one, on one side, and two circular cuts on the other. Why?

On a few of the larger leaves, as many as seven cuts were made, and four were on the other side. This leaf was too dry to print, as I had it three days before I returned to town.

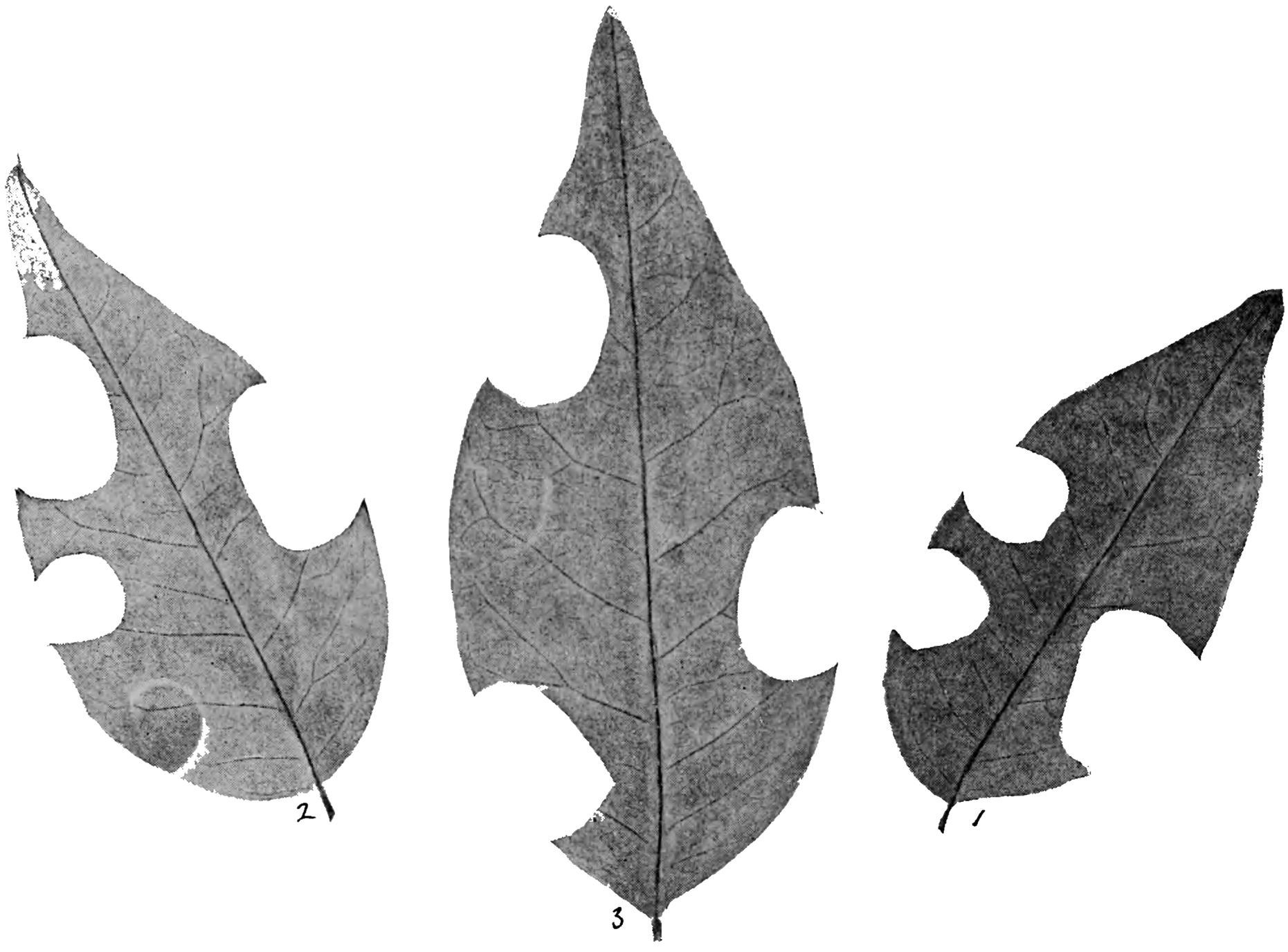
Again, you will notice on Nos. 2 and 3 that fresh cuts have been begun but not finished.

Again why? Is it instinct—so called—or is it reason that told the creature that it was taking too much toll off the smaller leaf? It took many more off the larger ones. The normal proportion seems to be two to one, as shown in the nature print No. 1.

Again, why does the insect centre the *cut* so as to leave a segment outside the *edge* of the leaf?

If you or any of your entomological men in Philadelphia can throw any light on this seeming simple, but to my mind somewhat complex, query, you will much oblige me.

Montreal, Canada. JOHN HUGH ROSS.



INSECT-CUT LEAVES.

[The Editor is not prepared to offer a solution of the question, but lays it before the readers. Insects have been justly credited with instinct, and judgment as well, but never before with charity to the leaves on which they feed. If only a coincident, it is yet interesting.—ED.]

ARE WILLOW TREES LIGHTNING PROOF?—"In all my forty years' experience with trees and plants," said a well-known gardener during one of the thunder-storms, "I have yet to hear of a willow tree being struck by lightning. Spruce trees, whitewood and pine trees sometimes almost seem to attract electricity, and oak and other large trees and many small trees are often maimed and killed. But willow trees seem for some reason to be immune to death or injury in this shape, and I have never seen or even heard of a tree of this family which lightning has ever struck."

—*Cleveland Leader.*

TO ADVANCE EDUCATION IN NATURE.—A good way to impress a thing on the memory is to write it down. The memories of pleasant strolls through the woods and fields and the objects met with are always gratefully recalled. Readers of MEEHANS' MONTHLY would add to their future pleasure and encourage others by recounting their experiences where they have anything of general interest to relate. The pages of this magazine are open for such use, and the Editor will do everything possible to advance the interests of the woodland-wanderer. Cameras have become almost indispensable adjuncts with such persons, and views that are instructive or particularly distinctive in some effect will gladly be reproduced. The Editor will further be glad to aid, so far as he may be able, in the determination of any plants or objects found on the strolls.

variety. Notwithstanding the commercial connection, the plant is valuable as an ornamental.

DWARF JAPANESE MAPLES.—To speak of Japanese Maples as dwarf is possibly ambiguous, as none of the popular kinds are looked upon as making large trees, in this country at least; but the term is especially applicable to the varieties with finely cut leaves, known as *Acer polymorphum dissectum*. The habit of growth of this maple is distinctly spreading, not erect like *A. polymorphum*, and while we admire the erect one above all, too much praise cannot be bestowed on the dwarf one for its graceful, feathery appearance.

Our illustration, herewith, represents a magnificent specimen perhaps twelve years old. It maintains perfect symmetry, is completely clothed with its beautiful reddish leaves, and is five feet or more in diameter.

The red-leaved variety is the most popular, though the plain green is considered by many as more effective. The red is richest when the foliage first appears in spring, after which there is a very gradual shading off to dark green.

The spreading habit makes these plants very suitable to fill in a corner in a bend of a walk; or for terraces; or they may be used in the fore of a group of various Japanese Maples.

For a time, these maples were most largely imported from Japan; but American nurserymen now grow them in large numbers and can secure a more vigorous plant.

Another Japanese Maple, *A. polymorphum pinnatifolium*, has a much divided leaf, but is yet quite distinct from *dissectum*. The lobes of the leaf are long, narrow, and not saw-edged. Its habit is more upright. When better known it will undoubtedly be very popular.

In connection with the variety *dissectum*, it should be added that, being a fairly rapid grower, in deep, loamy soil it is easily possible to make a tall specimen by keeping a leader staked and tied up for several years. Its early tendency is to make a solitary leader. It is an excellent plant for cemetery use.

RED CUT-LEAVED JAPANESE MAPLE

INSECT-PROOF ROSES.—Rose-bugs and leaf-slugs are so numerous some years, one is easily discouraged in out-door rose growing. The Japanese *Rosa rugosa* and the *Wichuraiana* roses are very much of an encouragement, for thus far they seem to have evaded the pests. This may be accounted for in the late-blooming

character, the major part of the rose-bugs having completed their destructive work and disappeared, and also in the rough leaves of the *rugosa*, and the tough ones of the *Wichuraiana*.

The *Rosa rugosa*, both red and white, are being largely used and their value appreciated. The others have not yet come in for their full share of popularity as arbor vines and for trailing over low walls. An attractive way to have a few plants is to stake them and allow the branches above to fall gracefully over.

CLIPPING EVERGREENS.—There is a great variance in gardening tastes. Some persons abhor anything formal, stiff, or in the slightest degree abnormal; a few will go utterly to the extreme; the remainder hold balanced ideas admitting both where they seem fitting and proper.

However tastes will disagree, some plants must have a little attention from the pruning shears to make them at all desirable. Many evergreens may be thus classified; but necessity only demands very slight attention. Retinisporas and pines are usually much benefitted by a slight shearing every two years. Hemlock and Norway Spruce may also be so treated to their advantage, and yews as well.

To accomplish the desired end, which is that of preventing bareness of the lower limbs and to encourage a degree of compactness without absolute formality, the occasional shearings should take place after new growth has advanced several inches, about half being cut away. This check to natural advancement causes the growth of lateral buds, and consequently a more compact appearance.

The spruce and any other evergreens of rapid growth and that form larger trees, should be trimmed to grow somewhat conical. If allowed to become broader above than below, the stronger upper branches will eventually rob the lower of nourishment and make them weak and more or less bare of foliage.

If shearing be neglected at the time designated, it may be done late in the growing season, if before growth is quite completed. Then strong buds will be formed for another season's growth.

The pruning of pines should be done by pinching back the young growth while it is soft and brittle.

SHOULD LAWN GRASS BE CLOSELY CUT?—The kinds of grass that are inclined to grow in tufts must be kept rather closely and regularly cut, if the creation of bare places is to be avoided. Fine grass in lawns exposed to hot suns and in light, well-drained soil, if cut exceedingly short is likely to suffer. In the average case, the knives of the mower should be set high, and the lawn kept frequently cut.

THE JAPANESE MAPLES' SHORT GROWING PERIOD.—To properly handle and care for plants one must thoroughly know their peculiarities. The Japanese Maple has a character worth noting, in its rapid growth in early spring and its sudden cessation. It takes but three or four days of real warm spring weather to make growths of five or six inches' length, and when a foot of growth is made, the average plant will stop and busy itself with maturing. This is an important fact for those persons that do odd summer pruning; unless the work is early done it is useless.

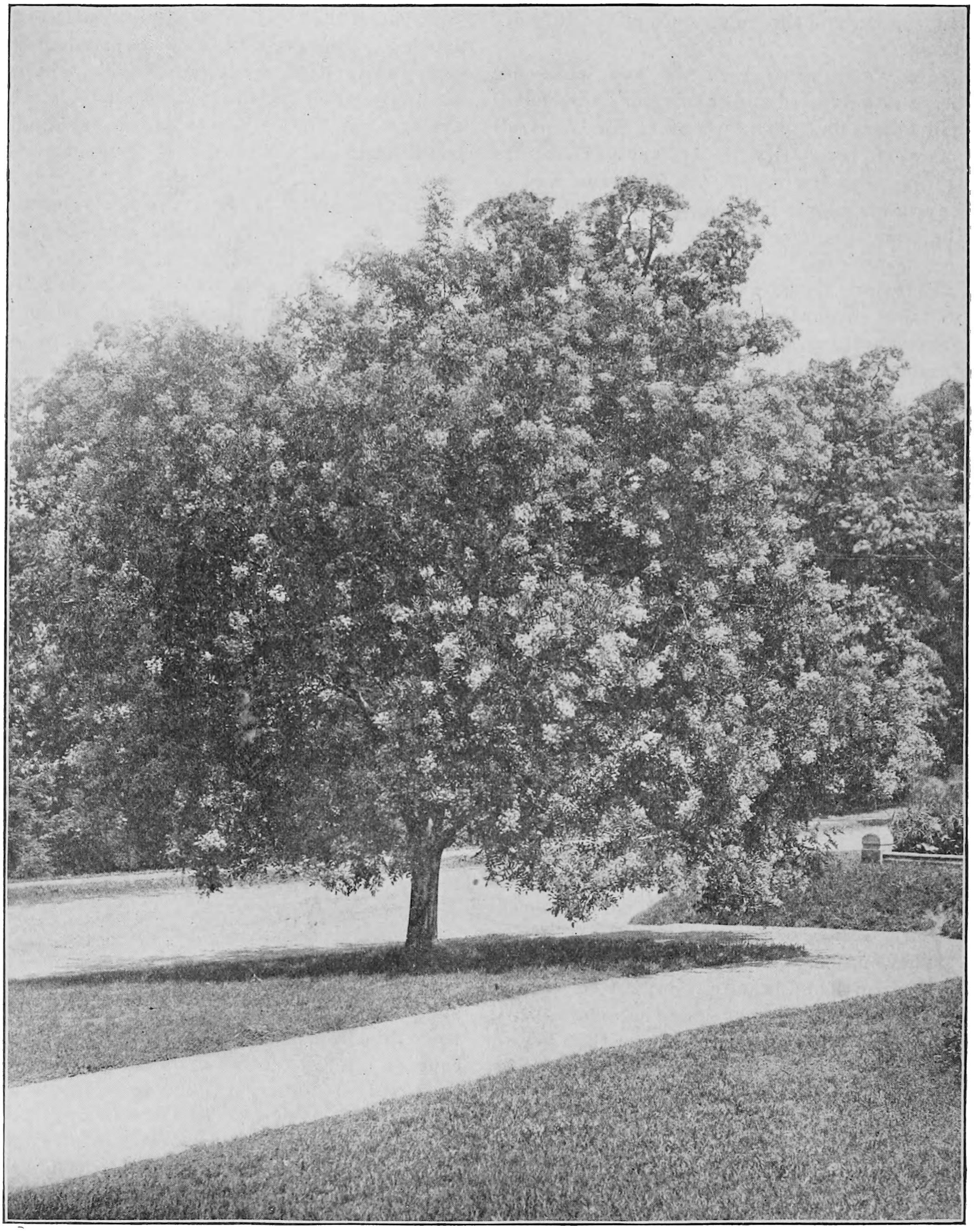
"SUN-PROOF" GERANIUMS.—After careful consideration of over 200 varieties, The Storrs & Harrison Co., Painesville, Ohio, recommend the following as a superior collection of Geraniums, one of their greatest merits being ability to stand what are usually unfavorable weather conditions. They term them "sun-proof." The selection is made to cover a wide range of color and is largely made up of the Bruant type. Bellerophon, Hubert le More, Jean Madeline, Louis Francis, Le Colosse, Mad. Jaulin, Mad. Landry, Mad. Carnot, M. Jules Dispot, Richelieu.

NEW OR RARE PLANTS.

JAENSCH'S VICTRIX SUGAR BEET.—More sugar is produced at the present time from beets than from any other source, not excluding cane, so interest centers upon the question of the best beets for sugar production. Jaensch's Victrix Beet, a variety of German origin, is claimed to have a greater percentage of sugar content than any other in American use. Messrs. D. M. Ferry and Co., Detroit, Mich., are offering it for the first time in this country.

TWO MASSIVE OAKS.—The oak is a tree that is almost idolized by lovers of nature. In poetry its heavy bole and massive limbs have

been an inspiration to many. It is the massive, noble king of many forests. Undoubtedly, the great White Oak is the chief cause for the admiration; its long arms stretching from the trunk are generally as large and heavy individually as the main trunks of large trees.



THE CHINESE PAGODA TREE, SOPHORA JAPONICA

But it is not the common White Oak the writer desires particularly to bring to the reader's attention, but the Swamp White Oak,

making a perfect mat of foliage, growing only about two inches high; withstanding the most severe weather, it is uninjured, and when in flower is a close rival in density of bloom to the Moss Pink. The flower scapes rise to about six inches above the plants, bearing white, star-shaped flowers. Coming after the Moss Pink is past, it makes a very worthy successor. The tips of the shoots taken off in spring and set two inches deep, leaving the tips slightly over ground, will root freely and make a good showing the first season. Seeds are easily procurable, but many inferior types are generally found amongst the seedlings. In the spring, old-established borders should be cut on each side with an edging-knife and the roots forked out, otherwise the plants will occupy more than their allotted space. After the flowers are past, their stems should be cut close to the plants, which then makes a beautiful carpet-like edging for the rest of the year.

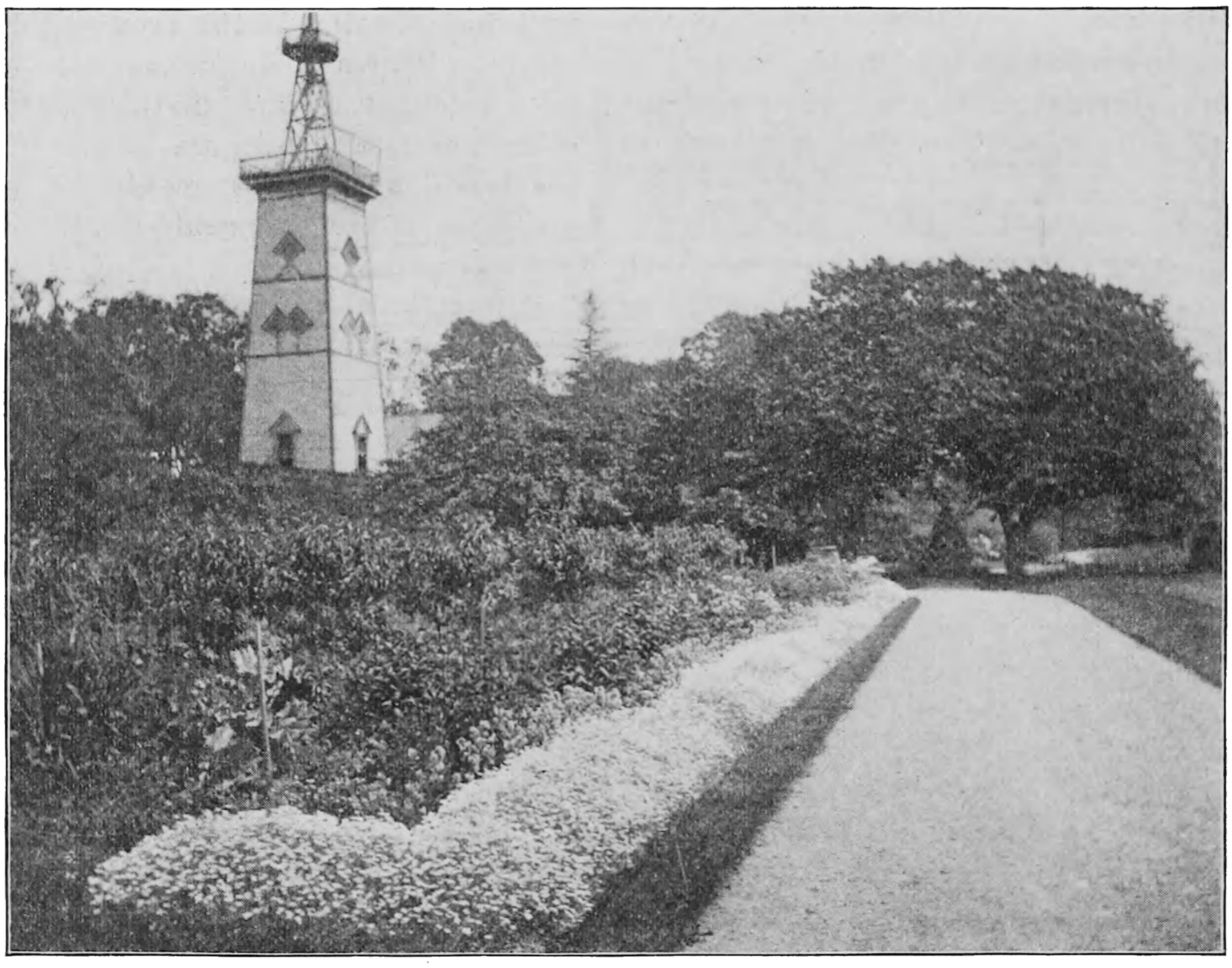
The picture shows how the plants look when in flower. JOHN DALLAS.

Lenox.

[Our correspondent does not name the flower shown massed in the picture. It is presumably the *Cerastium*.—ED.]

TURF GARDEN WALKS.—How much more restful to both eye and foot is a smooth, velvety turf garden walk compared with one of gravel, broken stone, or any other material! One has but to glance at the illustration on page 112 to acknowledge the beauty and natural grace of a turf walk.

Of course, there are times when this kind of pathway is impracticable; narrow walks cannot well be made satisfactorily of grass, nor are they very attractive. Present-day flower gardens are usually designed with the leading paths broad, long-sweeping, and of turf; the beds are then intersected by narrow, open, made paths, lined with box or similar formal edging.



BEAUTIFUL BORDER FLOWERS.

The scene from which our illustration is taken is from the private garden of Lord Sackville-West, Knowle Park, Kent, England, and is furnished by courtesy of Mr. Thomas B. Temple, of Philadelphia. This park, Mr. Temple says, is one of the finest old Baronial estates in England. It is near the village of Seven Oaks.

HYBRID DELPHINIUMS.—The Delphinium, or Larkspur, is a favorite with every one. In

English gardens it is one of the most prominent features in mixed borders (see illustration page 112), and has been made over into many forms and shades of color at the hands of the hybridizer. A representative collection of hybrids is rare in the United States, though frequent efforts are made to introduce them. Some of the forms are quite different from the type, almost losing the long spur, and by shortened sepals appearing round or cup-shaped. A few are more or less double.

FRUITS AND VEGETABLES.

CARE OF ASPARAGUS BEDS.—Asparagus tops should not be allowed to seed on the old bed, but should be cut and burned or hauled away so the seed will be destroyed. The bed should then be dressed with a liberal coat of coarse manure free from weed seeds.

—*Denver Field and Farm.*

LARGE RHUBARB.—The London *Journal of Horticulture* says that Mr. J. Knott pulled up a stick of rhubarb in the rectory garden, Black Torrington, Devon, on Saturday, which measured 21 inches in length, 6 inches in girth at the smallest part, and 7 inches round at the largest part, while the longest rib of the leaf measured 30 inches in length, and the circumference of the outer edge of the leaf measured 18 feet 6 inches. It is probable, however, that American growers can beat this. It seems that stalks this size, though not common, are occasionally seen.

PEACHES AND APRICOTS FOR INDOOR CULTURE.—A correspondent desires the names of the best peaches and apricots for indoor culture, and asks whether plum is a better stock for them than the peach. The Golden Dwarf and Italian Dwarf peaches are extensively used, though any good varieties ordinarily in cultivation out-of-doors should prove desirable.

What has been the experience of our readers as regards suitable varieties and the most desirable stock?

PROLIFIC JAPANESE PLUMS.—T. J. Dwyer and Son, Cornwall, N. Y., growers of Japanese plums, in writing say: "We fruited several hundred trees the past season of 1901. It was a common occurrence to pick half a bushel of choice fruit from three- and four-year-old trees of Abundance, Burbank, and other varieties; this, too, after we had thinned out two-thirds of the fruit from the trees. This thinning is of absolute necessity to get choice fruit and to keep the trees from breaking down with an overload of fruit."

SOMETHING ABOUT BEANS.—I was about to ask the origin of the expression, "He don't know beans," when I read the following from Wm. B. Wright: "Did you ever watch beans grow? They come up out of the ground as if they had been planted upside down. Each appears carrying the seed on top of his stalk, as if they were afraid folks would not know they were beans unless they immediately told them."

Possibly the above is a sufficient answer to the query?

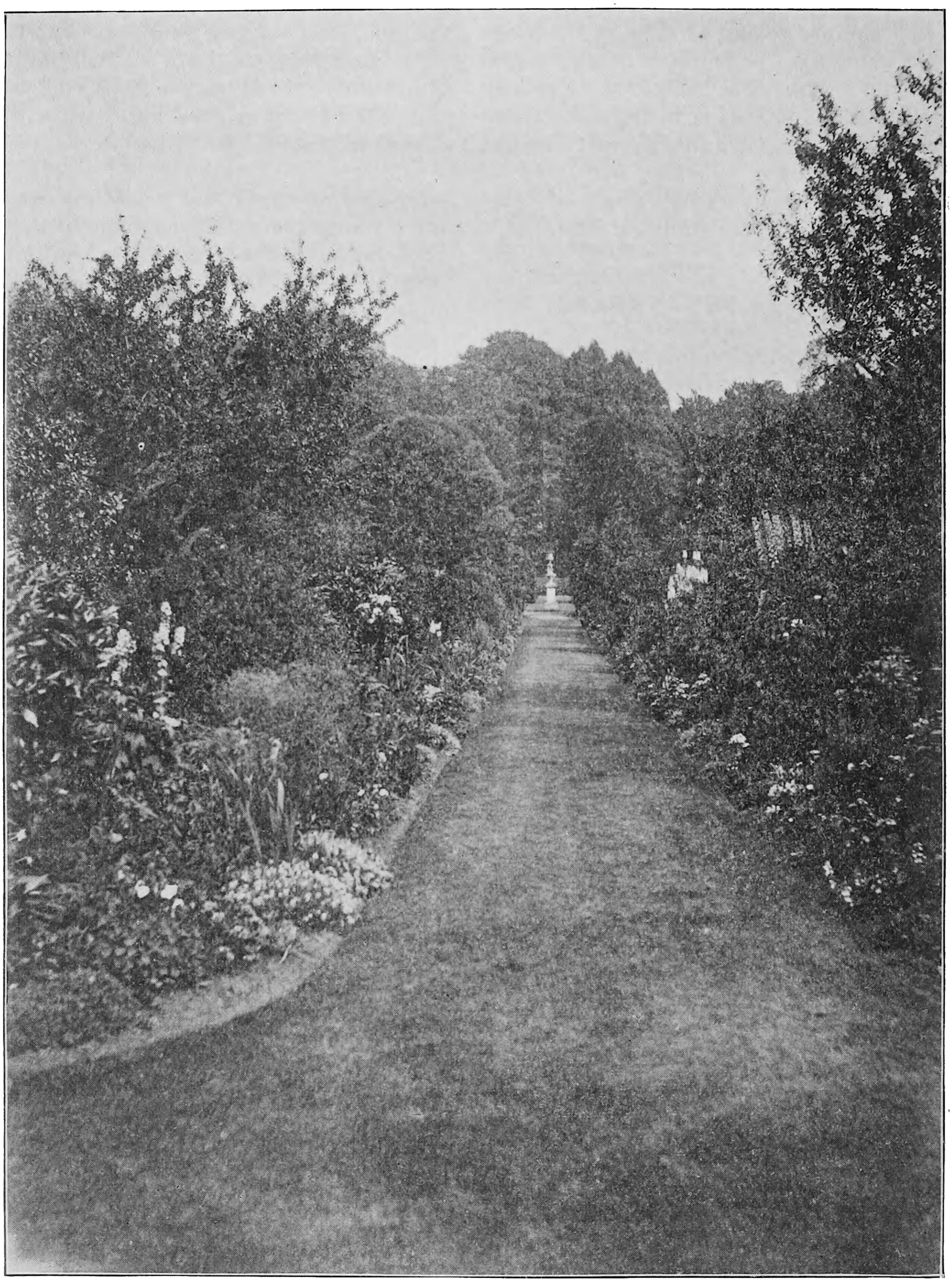
In early accounts of American discovery, beans are mentioned as found among the native tribes. In 1492 Columbus found beans in Cuba. According to De Vegas, the Indians of Peru had several kinds of beans. In Bancroft's "Native Races" the beans of Mexico are mentioned. De Candolle assigns the lima bean to Brazil, where it has been found growing wild. Seeds have been found in the mummy graves of Peru. In southern Florida the lima bean seed, white blotched or speckled with red, is found growing spontaneously in abandoned Indian plantations.

It has not been found wild in Asia, nor has it any Indian or Sanscrit name. It reached England in 1779. In Central Africa but two seeds are ever found in a pod.

It is not probable that the common kidney-bean (*Phaseolus vulgaris*) existed in the Old World before the discovery of America. The evidence for the antiquity of the bean in America is both circumstantial and direct, and the varieties were numerous. In 1609 Hudson, exploring the river that bears his name, found beans. In 1640 Parkinson says: "The varieties from Africa, Brazil, West and East Indies, Virginia, etc., are endless to recite, or useless, only to behold and contemplate the wonderful works of the Creator."

In the report of the Missouri Botanical Garden of 1901, H. C. Irish gives an exhaustive paper upon "Garden Beans cultivated as

esculents." He gives ten pages of pictured beans, reminding one of 80 varieties a little colored beans in Mexico. He gives the mode of preparation of each. In the United States, beans



A TURF GARDEN WALK. SEE PAGE 110.

boy in Vermont collected and carried to the fair many years ago. Mr. Irish says white beans are mostly used in the United States and are soaked in water, then boiled and baked. In old times in Vermont, beans were soaked in cold water over night, then boiled all the fore-

BIOGRAPHY AND LITERATURE.

A ROSE WITHOUT A THORN.

We love each other, naught can this undo;
Though poor, our hearts o'erflow with riches rare;
The world is free—and bright stern life's view,
If we, unbending, all its trials bear.

Where'er thou goest, I with thee shall go,
Where thou abidest, I with thee shall stay.
If on thy path thorns only bloom and grow,
A Rose shall kiss their painful sting away.

MRS. ROSA G. P. to her young husband.

HON. J. STERLING MORTON.—Most of our readers have doubtless already learned of the death of the ex-Secretary of Agriculture, Hon. J. Sterling Morton, which occurred April 28th; but for the tribute that is due this original worker in the interests of horticulture and agriculture, some record is expected in these columns.

Mr. Morton should ever be prominently remembered as the originator of "Arbor Day," which, while not observed as generally as it should be, lends great encouragement in the direction of tree planting. It is said that the first day of its observance in his own State, over one million trees were planted.

While Secretary of Agriculture, Mr. Morton showed himself unalterably opposed to the scandalous free-seed distribution, which system has since been abolished and replaced by the distribution of plants. He died at the age of seventy.

BERGAMOT.—There seems to be some confusion as to what plant is meant by the term Bergamot. Originally, and now, it is applied to the Bergamot Orange (*Citrus Bergamia*), which is very fragrant, and from the flowers and fruit of which the essential oil or perfume known to commerce as "Bergamot" is obtained; but it has long been applied to certain plants grown in our gardens, and also to certain wild plants growing in this country. Meehans' Catalogue of Trees, Shrubs and Plants seems to use it as synonymous with *Monarda didyma*, but I think the common names employed in designating the latter are Oswego Tea, Bee Balm and Indian's Plume, the latter of which is very descriptive of the flower. *Monarda fistulosa* is also called Bergamot, or Wild Bergamot, by Britton & Brown, and *Mentha citrata* is the garden plant known by the name of Bergamot, or Bergamot Mint, in England. The name is also applied to a well-known and very luscious species of pear.

Which of these plants are we to understand when the term is used?

H. W. BOOKSTAVER.

[This confusion is an example of what may frequently arise where dependence is placed on common or popular names, for these names, like "nick-names" given among children, are liable to vary according to the circumstances under which they are found by different persons at several times. It is impossible to have authorized names of this character, and yet they be "popular" ones in the true sense of the word. From the standpoint of MEEHANS' MONTHLY, the term is usually applied to *Monarda fistulosa*, when speaking of a plant. Meehans' latest catalogue says, "Monardas are known as Bergamots," which is true of them as a class as recognized by some persons. From the confusion of popular names we seek refuge amongst botanical ones, and even here, since the attempted revisions, one may frequently be lost; but we have recourse to standard authorities that will unravel most ordinary puzzles.—ED.]

SUGGESTIONS FOR THE PRESERVATION OF OUR NATIVE PLANTS.—Wild-flower lovers, and doubtless others who never before thought to feel an interest in our native plants, have been greatly agitated of late because of a noticeable diminution in these plants near our large cities. A feeling against the wanton destruction of anything in which nature is concerned is worthy and should have every one's support. But it is not always that our best efforts are spent in the direction that will bring speediest

relief. To encourage practical thoughts in this direction, and so bring out the best propositions, a fund was given by the Misses Caroline and Olivia Phelps Stokes for that purpose, the income to provide prizes for competitive essays.

The first prize was awarded Dr. F. H. Knowlton, of the U. S. National Museum, Washington, D. C., for his paper entitled "Suggestions for the Preservation of our Native Plants," copies of which are being distributed by the New York Botanical Garden as a reprint from its *Journal.*

The author compares the destruction of plants with that of birds and the forests, citing the beneficial results of public interest in behalf of the last two named; but he does not make the comparison as strong as it might be, inasmuch as he does not draw the commercial side of wild-flower gathering into as great prominence as he should. The picking of handfuls of plants by individuals is of very little consequence beside the enormous gatherings of the commercial collectors. The man who fills orders for *Lilium superbum* in lots of a thousand and more, which is not at all infrequent, will quickly exhaust a locality. The fern-hunter supplies his customers by the thousands; native orchids, poor things, are handled in large quantities,—and the saddest part of this is that almost all invariably die. Are these collectors to be wholly blamed? They supply a demand for the transportation of nature from one spot to another; from inaccessible places to places where many can enjoy them. What, then, can be done to supply a meritorious want without the attending destruction? Encourage cultivation of these plants. It is not impossible. The cheapness of collected plants alone makes that method the most attractive.

Dr. Knowlton proposes the arousing of public sentiment in behalf of preservation and as an educational means as well. He would establish a Press Bureau for the dissemination of notes; a Torrey Society on the lines of the Audubon Society; the awakening of popular interest in flowers through an organ of the proposed society; and the encouragement of school gardens. These all would have their effect, no doubt, and especially happy would be the results of a broader education on the subject.

FUMIGATION METHODS, by Prof. Willis G. Johnson, published by Orange Judd Co., N. Y.

The stir made in horticultural circles by the wide spreading of the San José Scale makes "Fumigation Methods" particularly interesting. This is the most complete publication yet issued, taking up every detail of fumigation.

Hydrocyanic gas is the chief subject as a destroyer of all kinds of scale insects and animal pests, and the reader is told how the gas is generated, what apparatus is required and how the gas is applied.

The spraying of oil has many advocates; but fumigation, according to the author, is the most satisfactory, if properly applied, because of its thoroughness.

Gas is dangerous, and Prof. Johnson loses no opportunity to caution the user to handle it with care. Its effect is so rapid and sure, the Professor goes so far as to casually recommend and prophesy its future use in dealing death to criminals.

Carbon bisulphide is also recommended for general purposes, and its uses are explained in detail. It is much more harmless and easier to handle, and will doubtless appeal more to the average reader. Contrary to the action of hydrocyanic gas, the fumes of this bisulphide are heavier than air and seek a lower level, making it useful in destroying ants and grubs in lawns and places difficult to reach.

The book closes with a complete summary of State laws relative to infested stock.

LAWS RELATING TO TREES.—The *Christian Endeavor World* gives the following:

"In planting his orchard, a farmer placed one row of trees close to the fence, which divided his land from his neighbor's. While the trees were small they caused no trouble; but, when they grew large, the branches extended out over the neighbor's land and became a source of annoyance to him. One fall, when the trees were loaded with fine fruit, the neighbor's boys commenced to take apples from the overhanging branches; and the wife of the owner of the orchard, being a hasty woman, scolded the boys and said some mean things about the neighbor's family. This started a very bitter quarrel. A few days after scolding the boys the woman crossed the division fence for a basket of apples, and was ordered out. Upon learning this, her husband

went to his attorney, and was told that, although the apples belonged to him, by crossing the fence to get them he made himself a trespasser, so the fine fruit fell off and rotted on the ground.

"The next spring the neighbor, while plowing under the overhanging branches of the apple trees, scratched one of his horses badly. This made him angry, and he sawed off all of the offending branches, straight above the fence. Then the owner of the trees again sought advice, but learned that he had no remedy. The trees looked very unsymmetrical, with the branches on one side all gone, but the neighbor had only exercised a legal right."

EDUCATION IN LANDSCAPE ENGINEERING.—A progressive young man in Ohio, who has already reached the position of foreman of an important park in his city, asks advice of the Editor concerning his further education in the direction of landscape engineering. Whatever he undertakes must be supplementary to his pursuit of a livelihood. He naturally seeks the desired information from books on landscape gardening, but having already digested the important American works, including those by Parsons and Waugh, he still feels a lack of knowledge of the purely engineering department of work. The advice given,—and it may appeal to others with similar inclinations,—is to seek practical knowledge through experience. Employment with a good landscape gardener who is engaged in large operations will make most things possible that are desired. If a course in civil engineering can be arranged for, it will prove valuable. MEEHANS' MONTHLY is always ready to give any possible aid and encouragement to young men seeking advancement in horticultural lines and will be glad to hear of such opportunities. If any book exists that will give just the information this young man wants the Editor does not know of it and would be glad to be informed for the benefit of inquirers.

THOMERY, RESIDENCE OF HENRY IV.—Thomery is situated on the eastern side of a hill sloping gently into the forest of Fontainebleau by the Seine. The river bathes its feet, the forest crowns its head, and the sun gives it its first rays. On the opposite side rises a second hill bearing the old Pressoirs du Roi (King's wine-press houses), the ancient residence of Henry IV.

There is a legend which says that the good king, while walking on the heights overlooking the valley, was struck with the beauty of the sight and exclaimed, "*Ici, tout me rit!*" pronunciation of which sounds like Thomery, hence the origin of its name.

Translated from the French by

SARAH D. MEEHAN LANNING.

PETER M. GIDEON MEMORIAL.—Effort is being made by the Minnesota State Horticultural Society to raise funds for a suitable memorial to Peter M. Gideon, who died Oct. 27, 1899. Mr. Gideon was best known as the originator of the Wealthy Apple, though he was a life-long worker in the general cause of pomology. The income from the memorial fund is to be used by the Board of Regents of the University of Minnesota, as premiums for members of the classes in horticulture in the Minnesota School of Agriculture.

GENERAL NOTES.

PEAR SYRUP.—Raising LeConte pears for syrup-making is said to be very profitable.

HERBARIUM SPECIMENS EXCHANGED.—Botanists interested in herbarium specimens and who have duplicates they would be willing to dispose of in exchange for others may find desiderata in the collection of Mr. F. F. Forbes, Brookline, Mass. He has many Alpine plants of Mt. Washington, N. H., and of Massachusetts.

A SAUCE-DRESSING FOR TABLE FRUIT.—Here is a dressing for ripe fruits—peaches, bananas, pears, fresh figs, if one can get them, or other varieties of fruit: Take almonds, sweet and bitter, and to every dozen of the former add four of the latter. Blanch, remove the skins and put to soak in cold water for two hours. Pound in a porcelain or marble mortar with a little salt, a bit of cayenne pepper and a little lemon juice. When the mixture is ground fine, it must be thinned to the consistency of a cream with sherry. Fresh cream can be added, if desired, just before the salad is served, being well stirred in.

—*N. Am. Horticulturist.*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MONARDA MENTHÆFOLIA.

MINT-SCENTED BERGAMOT.

NATURAL ORDER, LABIATÆ.

MONARDA MENTHÆFOLIA, Graham.—Stalk pilose; leaves cordate-acuminate, serrate, pilose beneath, shortly petiolate; flowers capitate; involucre herbaceous, veined with purple. Perfume of the whole plant like mint. Graham, in the Edinburg *Philosophical Journal*, page 347, 1829.

Our picture was made a long time ago, from specimens received from Mrs. Ross Lewers, of Franktown, Reno County, Nevada. In Gray's "Synoptical Flora of the Northern United States," what seemed to be our plant was made synonymous with *M. fistulosa* var. *mollis*, of Bentham. Not being satisfied with this determination, the picture has been held in hand till recently, after an exhaustive paper on the subject by Mr. Fernald, in *Rhodora* for January, 1901. In this paper Mr. Fernald regards *M. mollis* of Linnæus as a distinct species from *M. fistulosa*, and he would rank our plant as *M. mollis* var. *menthæfolia*. Aside from other characters, he describes *M. fistulosa* as having hairy, long-villous, spreading pubescence; while *M. mollis* has minute, appressed pubescence.

For all the careful work in comparing original specimens and examining full sets of specimens, it has seemed best to describe it here under its original name, because its appearance seems distinct from other forms referred to *M. mollis*. Its peppermint odor is peculiar to itself, and the almost sessile leaves are a good character, while its range of territory is not invaded by other forms. And besides, it preserves better its original history. In describing it, Graham says: "It is nearly allied to *M. oblongifolia*, but is distinguished from it by its more hairy stems, its harsher and less acuminate leaves, and shorter petioles. Raised from seed collected by Mr. Drummond, between Norway House and Canada, and flowered freely in August. Even the native species vary in the degree of hairiness, and the number and depth of the serratures of the leaves, which also differ in their breadth at the base, and are more elongated." It may be noted here that the *M. oblongifolia* referred to by Graham is evidently the *M. oblongata* described in Aiton's *Hortus Kewensis*, and is a southeastern Atlantic form of *M. fistulosa*. As Graham remarks, it is quite smooth, as a Georgian specimen, collected by Le Conte years ago, examined by the author, shows.

Aside from the name and exact place the plant should occupy in systematic botany, it is probably one of the showiest of the family, and must have a prominent place in the wild-flower scenery in the mountain regions in which it is so much at home. One of the most popular of the genus for ornamental purposes is *Monarda didyma* and its varieties, common in old-fashioned gardens under the name of Bergamot, or Oswego Tea; while the varieties of *Monarda fistulosa* known as Wild Bergamot are scarcely less popular. But in these there seems to be a superabundance of foliage in comparison with the flowers, and again the flowers themselves seem loosely scattered in the heads. In our plant, the foliage does not obtrude itself; while the compact heads of flowers on dwarfish stems and all about the same height, make a striking sheet of blossom rarely seen in species of this genus. It is these and similar characters, not often noted by systematists, that create the impression by a sort of *coup d'œil*, as the French might say, that in *Monarda menthæfolia* nature had made a good species for us, for all the fact that it was difficult for the botanist to describe the distinctive differences in ordinary scientific terms. What is meant by the scattering of the flowers in the head may be better understood by comparing the picture of *Monarda didyma*, in the second volume of the second series of the "Flowers and Ferns of the United States," page 105—a work, by the way, of which these chapters are a continuation—

with the present picture; or, if not at hand, with the engravings of many species in Britton & Brown's "Illustrated Flora of the Northern States and Canada." In these it is rare to find more than a dozen flowers open at one time. The present picture shows a complete bouquet of small flowers—a condition in which the other species are rarely found.

In connection with these full-flowered heads, is an interesting point for the student of plant-life. Those who have followed the author through the series of chapters illustrating this work will well understand the position taken, that the forms and characters of plants with their flowers are determined by the degree and direction of energy in connection with the rests and advances of plant-life. In the case of our plant, energy is expended in constructing a minute flower-bud, but leaves it at once to continue the construction of others until the last little bud in the great globular head is formed at its crown. Energy is then directed downwards, and the little buds take a renewed growth after the many days of rest, and become perfect flowers, with resultant seeds. In this species, as noted in the plate, this downward flow of energy is so rapid that lower series in the spiral coil are brought into renewed growth before the flowers at the apex have time to fade. We see here the exact method by which nature makes those differences that we call specific characters. There is no need of calling in any outside conditions to account for the origin of species. Environment, natural selection, struggle for life, survival of the fittest, and other hypotheses have an influence to some extent; but that influence goes only so far as it may act on accelerating or retarding the vital energy of the plant, which is solely responsible for the results. In order to observe the difference between this upward and downward flow of energy, the common ox-eye daisy, *Chrysanthemum Leucanthemum*, may be taken for comparison. In this we find no resting period in the florets. As fast as the tiny buds are formed, the active energy is continued until the floret has entirely performed its functions.

The whole genus *Monarda*, and especially our *M. menthæfolia*, affords excellent material to those fond of the study of variations. These are so numerous in this, that they give trouble to the systematist in deciding to which species any set of individuals should be referred. With the principle in mind that form is dependent on the degree of energy exerted, variation becomes a pleasure rather than an irritating puzzle. Taking Britton & Brown's "Illustrated Flora," for example, we note that every species figured, among which our plant is supposed to have somewhere a place, is represented as having the lower lip somewhat ovoid and trifid—all, in fact, nearly alike. Ours (see Fig. 3) is ligulate, undivided, and tapering to a point.

Considerable confusion and speculation has arisen concerning the application of the name Bergamot, and much of interest might be added to these columns did not the space forbid.

The whole family of *Monarda* has had considerable tossing about. When Linnæus undertook the reform of botany as a system, he found them combined with the Sweet Marjorams, under the name *Origanum*, as they were placed by Rivinius. In 1737 he separated them as *Monarda*, honoring in this way Nicolas Monardes, a Spanish physician of the sixteenth century, who wrote a work on the medicines of the world. The date of his birth at Seville is unknown. He died in 1578. The whole genus is, however, American, not one being even found in Japan, where so many species that seem to be typical of Eastern America so often also appear. They were among the first to set European botanists to reflecting on the instability of many specific characters. Indeed, it was in a paper on this subject in the "Amœnites Acad." that he first mentioned *M. mollis*—not as a species, though often quoted as such, but as a mere variety. Dr. Muhlenberg, in a letter to William Bartram, on Sept. 13, 1792, complaining of Linnæus in this respect, throws in at length the excuse "But how could it be otherwise in such a work? (*Species Plantarum.*) Americans who see American plants in their native places must compare them with good figures and amend the species." He places *Monarda* as one of the especially troublesome genera in this respect.

EXPLANATION OF THE PLATE.—1. Upper portion of flower-stalk from a plant from Reno County, Nevada. 2. Barren shoot, somewhat trailing, appearing in autumn. 3. Side view of a single flower, showing in actual size the proportions of all its parts.

Prepared by THOMAS MEEHAN.

The cut is made by the Leaf-cutter Bee, Megachile, and not by a wasp. Probably the reason that it does not take more cuts from a leaf, is that the small leaf would not be stiff enough to allow it.

The insect centers the cut so that the pieces will be proper shape for its purpose. You will notice one piece is circular and the other is oval. The former fits straight across the circular nest and is used for partitions between the egg cells; the latter is used for lining the cell.

One will need to "look quick" to see the operator stride the edge of a rose-leaf and cut the pieces with her mandibles. After cutting a number and using them to prepare a place, the first egg is placed at the bottom of the cell and stored with sufficient food for the young through its larva state. The circular partition is placed over this, another egg with accompanying food, and so on to the last.

I hope Mr. Ross may be fortunate in finding one of the nests of this bee.

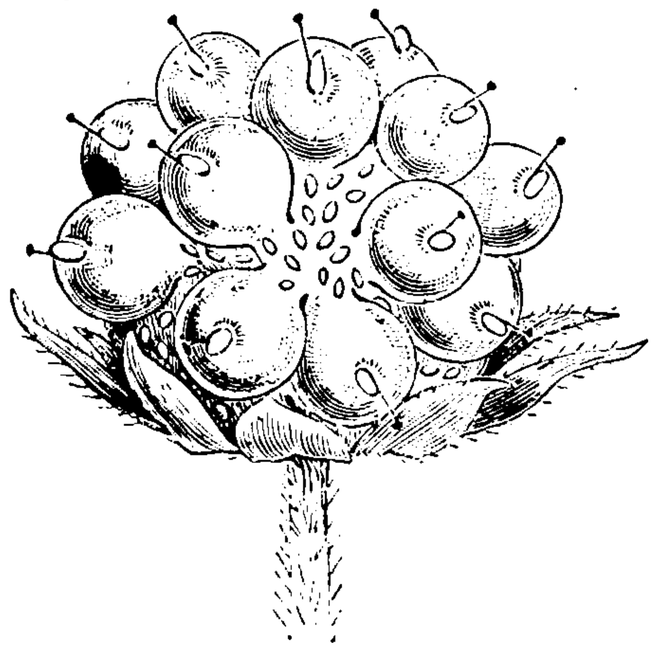
Tarrytown, N. Y. S. G. HARRIS.

ASCLEPIAS QUADRIFOLIA. — James Kirby, Huntington, N. Y., writes: "I have just found a little gem in *Asclepias quadrifolia*, and though traveling quite a distance I was unable to find more than one plant. (There is a quantity of *Hieracium venosum*, referred to on page 88 of the June MONTHLY, growing here.)"

It is always pleasant to find plants rare in certain localities, and especially those that are prominently different from others of its family. This *Asclepias* carries its identity revealed in the arrangement of its leaves,—namely, in whorls of four (*quadrifolia*). In respect of this arrangement, however, the number in each whorl is not constant on the same plant; some will simply be opposite in pairs. Again, some might confuse it for a moment with *Asclepias verticillata*, which, as its name implies, has numerous leaves in verticils, or whorls; but these leaves are so narrow (linear) they will be quickly determined.

Every one familiar with garden plants knows *Asclepias tuberosa*, the Butterfly-weed. It is the showiest of all. Another correspondent, recently remarking of a trip through Southern Pennsylvania, went into ecstasies over a field of about twenty acres which was literary ablaze with the flowers of this species. But the color may be found in many shades of orange or yellow, the latter being very weak. Then, too, the habit is at times very sprawling. *A. rubra* is an interesting species with dark-red flowers.

RASPBERRIES AND STRAWBERRIES. — The lovers of flowers not only desire pleasure from their beauty and fragrance, but also from their behavior as well. How plants behave, has always a charm, and MEEHANS' MONTHLY prides itself on the cultivation of this study. What are called freaks, often show us how the law of variation operates. A singular instance of this power of variation in plants is noted in a recent issue of the London *Gardeners' Chronicle*. A strawberry has the exposed seed carpels covered with pulp as if it were a blackberry!



Some fifty years ago, when Dr. Lindley presided at Chiswick, near London, and the candidates for graduation appeared before him, he often gave them the most unexpected questions. One was, on a certain occasion, "Describe in popular language the difference between the fruit of a blackberry, a raspberry, and a strawberry."

The professor would himself have been nonplused had the student presented a "strawberry" masquerading in the dress of a raspberry as this does. Nature never does things like these once for all. Some of our readers might find the vagary repeated if they look for them.

A POPULAR COURSE IN BOTANY.—Announcement of a prospective botanical course of study in MEEHANS' MONTHLY brought a gratifying number of letters approving the idea; the Editor would be glad to have word from others who have not yet signified their desire to have it. It seems impracticable to take it up at this period, and meanwhile the pages devoted to Wild Flowers and Nature will be kept filled with matter as interesting as possible.

HAY-TIME.

So through the green gloom of the wood they passed,
And issuing under open heavens beheld
A little town with towers, upon a rock,
And close beneath, a meadow gem-like chased
In the brown wild, and mowers mowing in it;
And down a rocky pathway from the place
There came a fair-haired youth, that in his hand
Bare victual for the mowers. TENNYSON.

TREES THAT ARE DORMANT IN SUMMER.—Things are not always what they seem; even trees will often deceive a careful investigator not particularly well posted.

Certain kinds of trees frequently remain dormant all summer following spring transplanting; to all appearances they are dead, and they are an eye-sore to the owner till removed.

The writer of this has seen Wistarias, Horse-chestnuts, Ashes and Tulip Trees remain perfectly dormant all summer and come out safely into leaf the following spring. It seems contrary to nature that trees should live without the leaves, which we learn are their lungs and essential for evaporation and assimilation of food in the growing season.

Explanation of this peculiar action is had by studying for a moment the conditions that probably exist. The roots of such trees have been disturbed and their feeding powers suddenly checked; they are called upon to support the tops as formerly, yet their opportunity for the time being is gone. A struggle is going on—the tops make a feeble effort to put forth buds, and draw on the roots for nourishment, with poor success; the roots yield of their stored food, but are too weak or are not in a position to make new feeding fibres. If the tops have not been pruned the drain is so much the greater. Where leaves put forth, transpiration would be more than the trees could stand, and they would gradually die away.

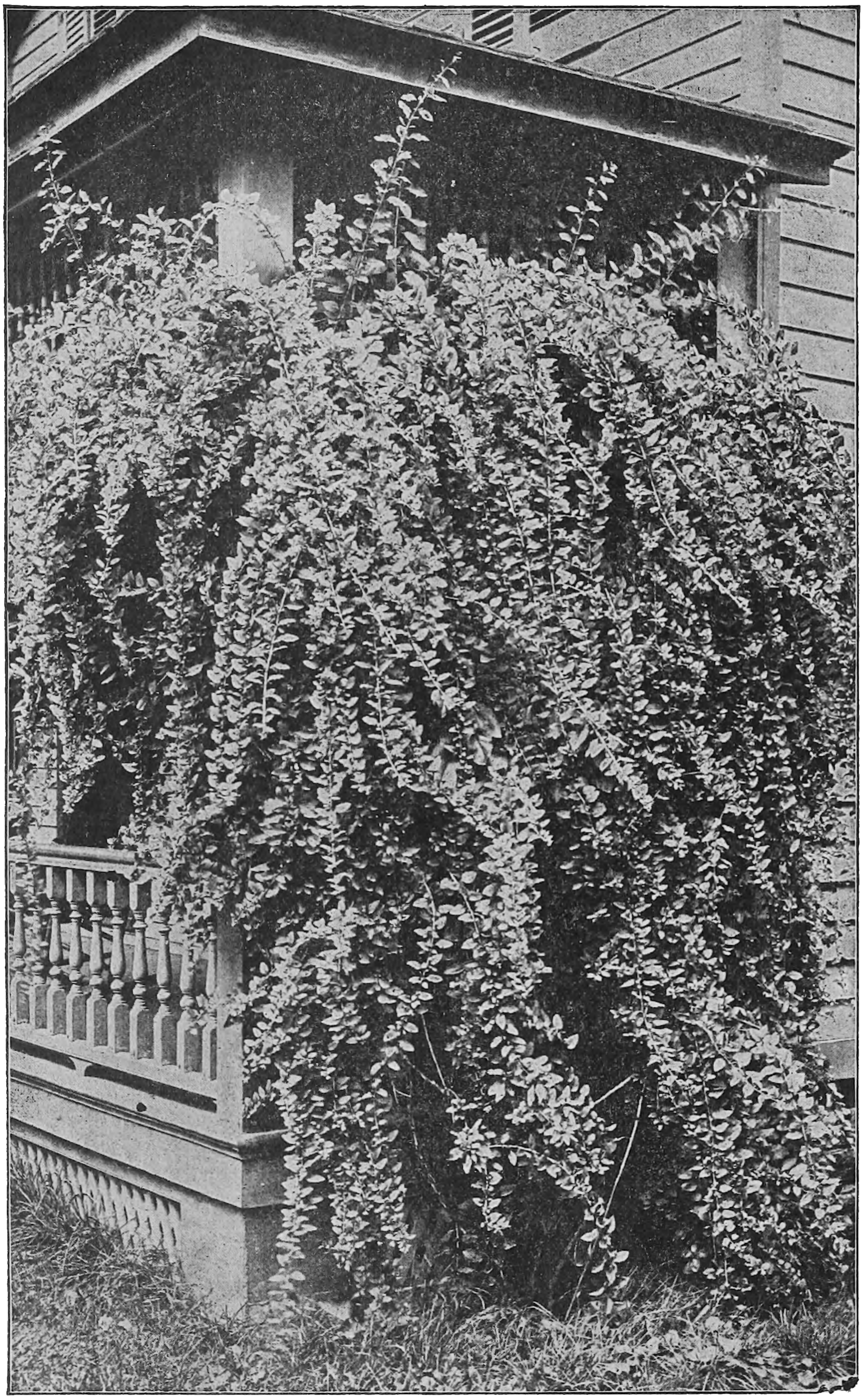
What is to be done with backward trees? We can't rely on one per cent. surviving such a struggle, so they must be aided. First take it for a possibility the planter may not have brought the soil into close contact with the roots, enabling them to secure sufficient nourishment. Take a heavy stick, about three inches in diameter at one end and about five feet long. Remove the soil to a depth of three or four inches, not disturbing any roots. Pound the soil as tight as possible, always providing the nature of the soil is such that pounding will not make it into bricks (if it will, it is not the best soil), which may bring the desired result.

Bear in mind that soft-wooded trees can be severely pruned with impunity, and relieve the stress of the roots by cutting back the tops. The Tulip Tree cannot be cut too sharply—in fact, the very best thing in such a case is to saw the trunk off on a level with the ground, when the following season will show a fine, strong growth almost equal to the former. There would be no loss of Tulip Trees if always thus treated, and the results are quite pleasing. Oaks, and trees that will not produce adventitious buds readily, should not be cut into two-year-old wood; but that much should be pruned away.

Now mulch the surface of the soil over the roots with manure containing considerable straw, *and don't water the trees till there are new growths on them*, and then only in case of drought, when they may suffer. Watering will give more moisture than they could possibly use, and decay of the roots would follow.

Peach trees in this condition should be treated in much the same manner as with the Tulip Tree, though that is best done at transplanting. Cut off every branch and twig very short. More peach trees are lost from failure to prune than from any other cause.

The way to determine dormancy in a tree is simple: Press the edge of the thumb-nail into the younger bark. If alive it will enter easily; the bark will have a softness to the touch, and will be green and sappy inside. If dead, the bark will be hard; the inside a brownish color.



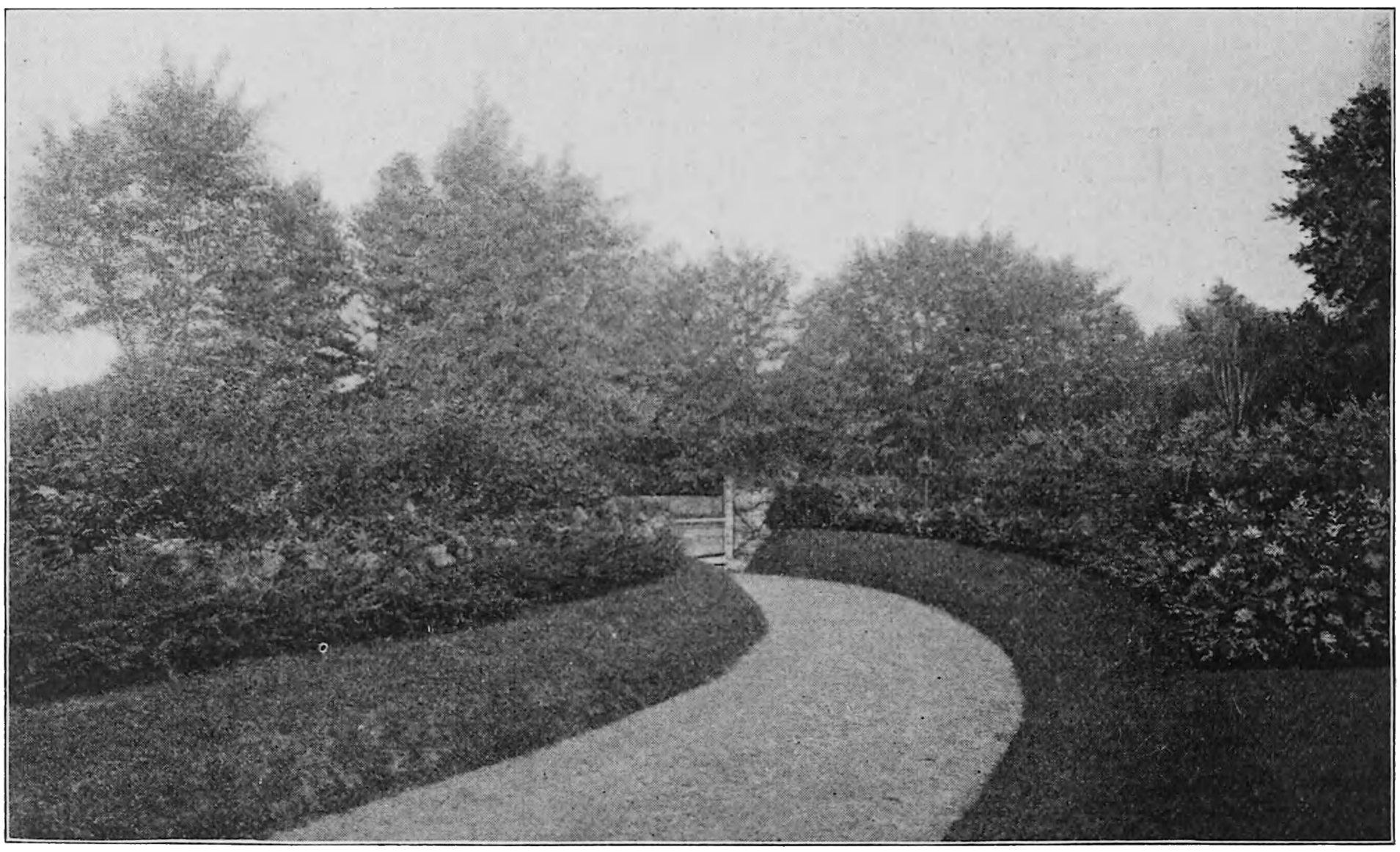
THE MATRIMONY VINE.

THE MATRIMONY VINE, LYCIUM CHINENSE.—It is difficult to understand just why *Lycium Chinense* as an ornamental vine is so often overlooked. Is it that the common name of Matrimony Vine holds something too mysterious for the average person to feel attracted to it? It has something akin to thorns, but is also profuse with beautiful scarlet berries in autumn. In habit, it is really only half vine, its long, slender growths falling gracefully from its support, as seen in the illustration with this. The foliage holds to the branches till very late in the fall, making a harmonious combination with the fruit. As it is not of a strictly climbing nature, it can be used for general massing purposes.

FLOWERING A WEAKENING PROCESS.—It is said that the production of flowers and seeds weakens the mother plant. In reality, ordinary support is more finely divided, and vitality in the individual parts is reduced proportionately. This concentrated vigor is noticeable with many plants that do not flower perfectly nor fruit; and the effect of prodigious flowering or fruiting is also observed in fruit orchards when the year following, growth, vigor, and further fruiting are markedly inferior.

will sprawl around helplessly till they feel something erect upon which they may have support. The manner in which they respond to a support given is amazing. Therefore, give the vines support immediately they are planted, even though they appear too small to need it.

DRIVEWAY ENTRANCES.—So much hangs on the effective arrangement of driveway entrances—the portals of the home grounds, through which critical visitors must mostly pass and receive their first impression of the place and indirectly of the occupants—great care should be bestowed upon them, having



A NEAT, EFFECTIVE DRIVEWAY.

an eye to the road itself; its manner of approach through the grounds, towards the dwelling; and to the planting and general landscape effect.

The accompanying photograph shows a side approach that seems perfect in all its details. The roadway has a gentle, sweeping ascent by well-kept sod-borders. The shrubs massed on either side are attractive throughout the year, and especially so at the time our picture was taken, when the Hydrangeas were at their showiest, set off by the edging of Japanese Barberry.

TREATMENT OF PLANTS TRANSPLANTED FROM POTS.—Many hardy plants are now grown in pots by florists and nurserymen, and transplanted in summer at convenient times. The risk in transplanting pot-grown stock is very slight if the plants be strong and carefully grown; but they need care from the planter when they are set out. The reason such plants transplant safely in the summer season is that, grown in pots the roots are induced to form a ball more or less compact, which is not disturbed in the moving. But the compactness of the ball, in one respect a safeguard, is in a way a danger, as when placed in well-prepared ground it is harder than the surrounding soil, and rain or artificial watering will not properly reach the roots till they commence to grow, and the growing plant will suffer. The prevention of trouble is made easy by soaking the ball in water just previons to the setting. If the ball be not hard and is to every appearance moist all the way through, such treatment may not be needed, as the watering that follows the planting will be sufficient. It is further desirable, as in every case of planting, to have the soil firmed around the ball of roots.

THE FAILURE OF WHITE BIRCHES.—In regard to the recent failure of White Birches, they are naturally short-lived trees, and subject to the extremities of all seasons. Often, a tree has done well for years, when of a

sudden it dies without apparent cause of borers or disease. Reviewing the past season it seems to give a clew. For instance, a tree having a healthy appearance all the preceding summer is found dead in the spring. If the tree was diseased, that certainly would be manifested during the growing season in its appearance. It is my belief that most of the birches die on account of an unfavorable season. PAUL B. RIIS.

Thompson, Conn.

[The nature of the supposed disease has been credited to a ferment fungus similar to the Fire-blight that attacks the pear. If so, the effect should be noticeable, as Mr. Riis suggests, during the growing season. But on the other hand, the loss has been too widespread to be attributed to an unfavorable season; they have been failing abroad as well as in this country. Again, the loss is exceptional. Why has it not occurred from time to time before? White Birches have been long established, and the affected ones are of all ages. Mr. Riis' suggestions are valuable and alter the situation some, but we need still more light.

Have our readers found any failures to reach a climax during the summer?—ED.]

THE IMPORTANCE OF MULCHING TREES.—The urgency of cultivating soil about trees is often made impressive by horticultural writers and teachers, while the importance of mulching is less brought to the fore.

Soil is cultivated with two objects in view—of conserving moisture and removing weeds. Mulching shades the soil and helps it to retain moisture, fulfilling one of the objects most excellently; and also to some extent it keeps down the weeds. Remove a good mulch from about a tree during a drouth, and if there has been any rain since the transplanting, the surface will be seen to be moist and cool.

Manure containing an abundance of straw is the best; though plain straw answers most purposes.

STRAIGHTENING OAKS.—Some young oaks I planted have grown a good deal this season, and in the case of a few of them the new wood seems hardly able to carry the weight. The trees bend over very considerably, one of them so much so that it broke off, and another would have done so if we had not cut the top off. Ought they to be cut off in all cases where they seem top-heavy, or will they come right later in the season? W. P. H.

Wheeling, W. Va.

[The trees will not likely come erect unless they are relieved of some of the top weight. You can prune them a little now, and possibly more in the winter time. If more than half should be removed at the present time, it might be a trifle injurious to the trees. It seems possible that even with the pruning away of some of the growth, the trees may not return to their erect position, in which case you might find it more satisfactory to fasten them up to stakes for a year or so, then you would not have to part with the excellent growth they have made.—ED.]

QUERCUS IMBRICARIA.—Though the Laurel Oak, as the *Quercus imbricaria* is called, is one of the most beautiful trees in cultivation, it is comparatively rare in collections. This, no doubt, is partly due to its being what we of the East term a Western oak, growing abundantly in many of the States there, and particularly in Missouri. And botanies tell us it extends even into Pennsylvania. As the nursery business took its rise in the Eastern States, the oaks indigenous thereabouts received first attention. But nowadays acorns are collected everywhere, and leading nurseries now have most all the oaks that are hardy, including the one of which I write, *imbricaria*.

Its name, Laurel Oak, seems quite appropriate, whether we have in mind our laurel, *Kalmia*, or the laurel of the Old World, *Prunus lauro-cerasus*. It has large, entire, shining green leaves, of thick texture; and its foliage altogether agrees with the general idea one has of the term "laurel-leaved."

It forms a tree of well-proportioned, pyramidal outline, as will be seen by the illustration presented of a tree growing in Fairmount Park, Philadelphia. There are quite a number of small trees in various grounds, and there comes to mind a very nice one on the grounds of Mr. John T. Morris, Chestnut Hill, and another at Geo. C. Thomas', Germantown, both of which are as large as the one illustrated.

The advice to prune oaks well when planting has often been given, but it cannot be too often repeated. They require it. Prune well,

QUERCUS IMBRICARIA.

grandiflora, Saxifragas, and many other shade-loving plants.

A rock garden does not necessarily mean that it should alone contain a collection of low-growing plants; these should be planted where they will show to the best advantage, creeping or climbing over the rocks. The taller plants can form irregular groups, miniature glades or dells, but should not crowd the lower plants. Such plants as Eulalias, bamboos, Yuccas, together with the previously-mentioned shrubs, insure against formal planting. Many of the herbaceous Spiræas are useful for this purpose. *Spiræa aruncus* makes a noble plant. *Spiræa palmata alba* is also very fine.

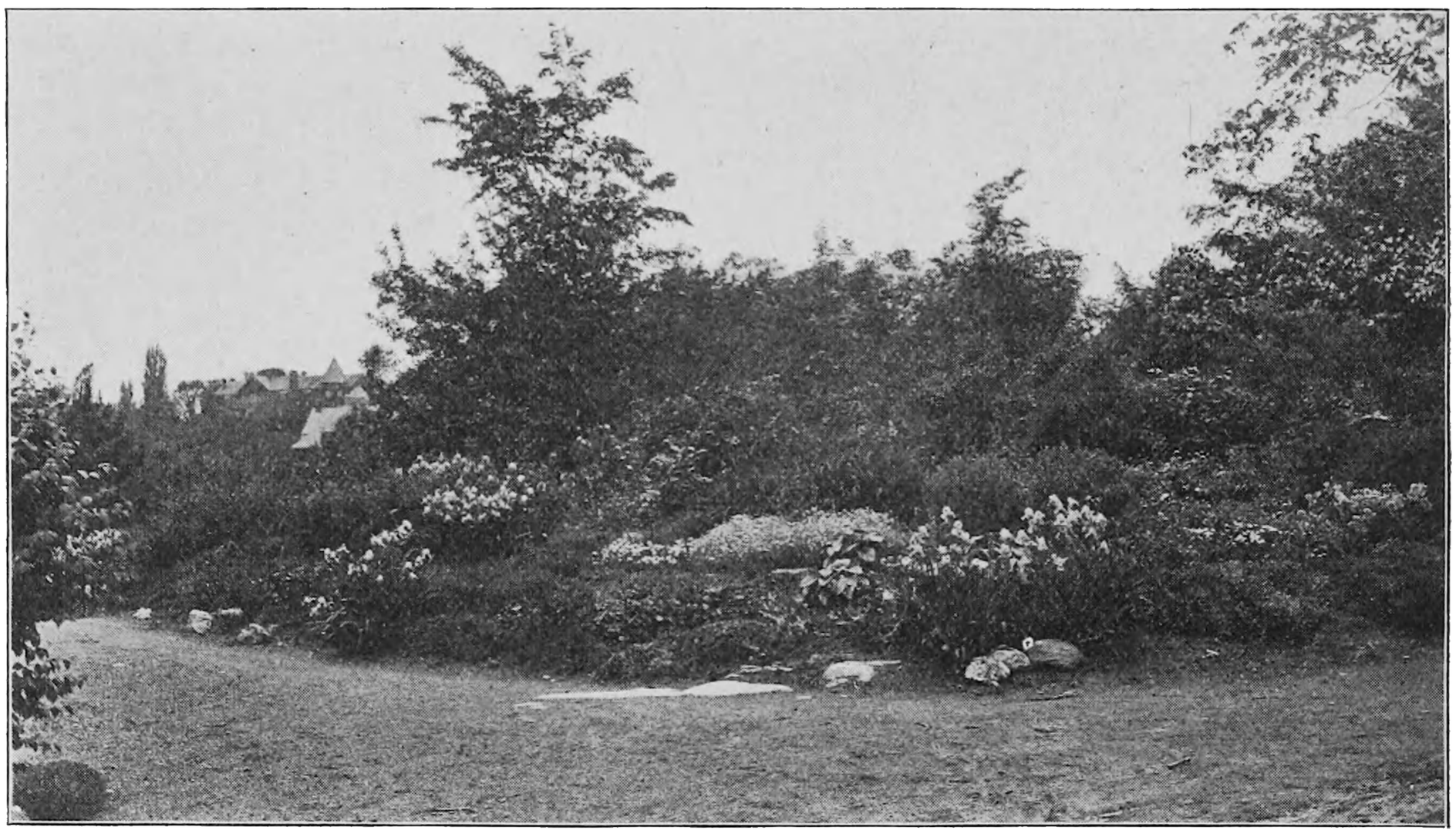
shoots springing from the base of the plant are both showing flower-buds at once. This is a very fine shrub, with showy white flowers, and the leaves silvery-white underneath.

A mass of *Spiræa Thunbergii* looks fine, with graceful, drooping, feathery branches.

Hypericum calycinum and *Moserianum* are useful subjects for this kind of a garden, both having large, showy flowers and good foliage. The last-named requires a good covering of leaves here in winter.

Lonicera Periclymenum covers a rock twelve feet across, and will soon make quite a show with its yellowish-carmine, sweet-scented flowers.

A mass of single roses in this rock garden



A ROADSIDE ROCKERY.

A mass of *Berberis Thunbergii* planted in the rockery looks quite refreshing, with its bright young growth; and, later in the year, the berries will add color to the whole. There is also a group of *Spiræa Anthony Waterer* just ready to open their flowers. When the flowers of this shrub are past, cut them off without delay, and you will soon be rewarded by a second crop of bloom, which will last until frost. This is one of the best low shrubs ever introduced.

The Oak-leaved Hydrangea does well on this rockery, and its large foliage takes on beautiful tints in the autumn. *Hydrangea nivea* does well in the same location; the young shoots from last year's wood and the young

are now in full flower, and they are very pretty, as is also a fine bush of *Rhodotypos Kerrioides*, with its rather large, white flowers.

Some fine plants of *Exochorda grandiflora* have just gone out of flower; they were very beautiful.

Clumps of *Genista tinctoria flore plena* are coming into flower. This prostrate variety, with its erect, double, yellow flowers, is a fine rock plant.

A great sheet of *Cerastium tomentosum*, with light grey foliage and pure white flowers, makes a striking show.

In regard to the notes on *Phlox subulata* in the June number of MEEHANS' MONTHLY. In this rock garden are masses of white *Phlox*

subulata running into large angular sheets of pink *Phlox*, forming bays of white into the irregular mass of pink *subulata*. *Phlox subulata Nelsoni*, The Bride, *lilacina* and *frondosa* are good kinds; all are beautiful. Another *Phlox* of sterling worth for the rockery is *P. amœna*. It grows here in large, broad masses. *P. divaricata*, with its uncommon, pleasing shade of blue flowers, can not be omitted; it flowers grandly here. I have a white form of this plant, but the color is not pure. *P. ovata* if once grown will always be grown.

Iberis sempervirens, and the double form, *I. corrifolia*, planted in crevices and dips, are growing rapidly, pushing their way over the rocks.

Aubretias, *Arabis alpina*, and the double form of the latter are indispensable for the rock garden. The appearance of *Arabis alpina* is much improved if the seed-pods are clipped off right after flowering, then it will look neat the rest of the season—anyhow, it grows out of the pods, but if cut at once it looks neat right away. If the variegated forms of these two last species, *Arabis* and *Aubretia*, can be had, gems will be had for the rock garden.

The trailing Veronicas are now looking beautiful, creeping over the rocks in sheets of blue.

Hemerocallis fulva, with its bold, clear, yellow, sweet-scented flowers, stands up sentinel-like amidst the surrounding plants. *H. flava* and *H. Thunbergii* are growing in clumps together, and, when *flava* is past, *Thunbergii* comes into flower, lasting with me last year until frost. I have other *Hemerocallis*, but I think these two the head of the family.

Funkias do well, and the white *subcordata grandiflora* will be fine later on. I always give this plant a heavy mulching of rotted manure before the leaves push through in spring.

The clumps of German Iris are now in full flower, with hundreds of their varied colored blooms. *Achillea tomentosa*, planted in masses, is as bright as gold, with its numerous flowers. *A. filipendula* is also a large, bright, showy, yellow-flowered yarrow. *A. millefolium rubrum* or *roseum* are good for some parts of the rockery. *Veronica incana* is a very striking plant when massed, with grey foliage and numerous blue flowers. *Geranium sanguineum* and the white variety are very fine; they quickly make clumps and are always in flower.

Dielytra spectabilis we had cut down to the ground by frost on May 8th. It is now again three feet tall and in full flower once more. Of course, the second growth of shoots are not so strong as the first, but they are beautiful just the same.

Stachys lanata looks well in a mass. *Anthemis tinctoria* makes a bright spot in the rockery for a long time.

Campanula carpatica, white and blue, should be in every garden. This is a chaste flower, and keeps in bloom a long time.

Anthericum Liliastrum major makes a fine clump when let alone. This plant is now in flower, and the white, lily-like flowers are handsome.

Primula vulgaris and varieties; *polyanthus* in many colors, especially the newer giant yellows, all flowered finely on this rockery in the spring.

The flowers of *Daphne Cneorum* are past flowering, but masses of this plant always look well in the rockery.

Trollius planted on the north side of a group of shrubs are just past flowering.

Lychnis Flos-cuculi flore plena is now in full flower and will remain so most of the summer. *L. Dioica flore plena* makes a brave show, as does also *Silene Virginica*.

Sedums do well—such as *spectabilis*—also the creeping forms, like *Sedum acre*. *Saxifraga crassifolia* and *S. cordifolia* are good rock plants, having fine, bold foliage and showy flowers. *Saxifraga pyramidalis*, *S. Wallacei*, also some of the native Saxifragas, are good rock plants planted on the north side of some shrubs, or on the north side of a rock.

The photograph on preceding page shows just such a place. The ground was planted four years ago. Facing eastwardly, the rocks dip suddenly toward the south-west, and do not show in the picture.

There are a great many plants I have not mentioned that are suitable for such a garden. If provisions are made for the plants, almost anything can be grown in such a garden. I have had old rocks full of scrub and poison ivy made into beauty spots. If I think a plant liable to dry out, I give it a pail of water; this is only in very dry weather.

Lenox, Mass. W. WOODS.

FLOWERING HABIT OF PINK VIOLETS.—A short time ago I planted out some of the new Pink Gem Violet plants. They have grown nicely and have budded well, but no blossoms have shown. Instead, the buds pass to the seed stage without any flowers showing at all. Can you explain this to me? Will the plants ever blossom, and will plants from seeds which are planted from these plants ever blossom? It seems very peculiar to me that none of the buds have shown any blossoms. M. R. S.

Cambridge, Mass.

[The action of the violet flowers is quite usual. The early flowers are the only ones that bloom openly. Later flowers, such as you have described, chiefly produce the seed, and "bloom" without opening. Judging from your description the plants are doing splendidly, and will give you an abundance of bloom next spring. This character is prominent in most violets. The seedlings from your plants will produce the same pink-colored flowers if you will preserve them.—ED.]

FRUITS AND VEGETABLES.

TIME TO GATHER PEARS.—There is scarcely a variety of pear that should be left to fully ripen on the tree. A part of them will rot at the core before they are soft on the outside, and all are benefitted in flavor by house ripening. The way to tell when pears are ripe enough to gather is when they come off easily. By taking the pear in the hand and placing the front finger along the stem and then turning it upward or backward it will unjoint if ready. If not intended for immediate use, they should be stored in a cellar or other moderately cool and even-temperatured room, and left to get properly colored and a little mellow before using. If ripening is desired to be hastened, the pears should be put in a warm, dry room, and kept well covered from the light.

—*Denver Field and Farm.*

THE VARYING QUALITY OF NIAGARA GRAPES AND OTHER FRUITS.—Among many fruits, there is very little appreciable difference in natural quality. To some persons an apple is simply an apple, a peach is only a peach—the variety makes but little difference if the general quality be above a fair average. With grapes it is very different. Every one is familiar with the old Concord and the newer Niagara; with the Catawba and Delaware; the imported white grapes, the California Tokays, the wild Fox, and the fine "hot-house" varieties are all recognized by sight and taste, if not all by name. Each, too, has its coterie of admirers, and justly so.

There is one fact relating to the Niagara that it is desired to bring out particularly; which is that there are two distinct qualities according to the stage of ripening. Those of the fruit that have remained long on the vines and become well developed have a peculiar, distinguishing flavor and a strong, agreeable odor; fruit picked early, though ripe, are not well developed, and the quality is really often poor, while the true Niagara flavor is lost. As a rule, the well ripened grapes have a yellowish cast. The new Campbell's Early is said to be the better for remaining long on the vines.

Some apples are noticeably different in quality. The R. I. Greening is very often poor and almost astringent; Baldwin is the same, but perhaps less frequently. Fine specimens of either are of high quality. To a certain extent, the trouble with the apples is similar to that of the Niagara grape—they are not well developed. But the non-development may not be the result of their being harvested too soon; there are other factors in the case. Overbearing or a weakening from the attacks of insects will cause an earlier ripening or an imperfect development. When will every fruit-grower learn that the best fruit is most profitable, and that it is only to be had by thorough care and cultivation?

The Seckel Pear is another instance, though there may be additional trouble of another nature—namely, that the true qualities have been lost somewhere in course of propagation. But the chief complaint is against the miserably grown fruit that gets into the market—ill-shapen, undeveloped stuff that by no means satisfies the lover of this delicious variety.

The Keiffer Pear is exceedingly variable, and again depends upon the care and judgment exercised in picking and ripening. This pear may be a delicious, juicy, soft-grained fruit, or it may be coarse, dry and almost worthless.

It would be disastrous to allow a Clapp's Favorite Pear ripen on the tree, as it will rot inside unawares. Picked early and ripened in the dark, it ripens uniformly and is delicious.

depredations to the notice of the officers, cannot prevent them in a place so frequented as this park, what could be done by laws in wild and unfrequented forests and fields?"

[The foregoing is doubtless prompted by a review, in MEEHANS' MONTHLY for July, of an essay by Dr. F. H. Knowlton, entitled "Suggestions for the Preservation of Our Native Plants." The reviewer's comment did not consider the establishment of protective laws, realizing with our correspondent that they are invariably ineffective. Public sentiment and education along the suggested lines are also more or less ineffective, because it only indirectly approaches the commercial collector. But even laws have educational results, and everything tending toward popular denunciation of ruthless collecting has some effect. The more doors that are closed, the less danger exists.

Again, in regard to the benefits from laws, there are contrary results. Money and new officials are required to make the laws operative, and the good work is harassed by politics and corruption. Perhaps it is pessimistic to consider the subject in such a light, but the inferences are drawn in the face of conditions.—ED.]

MERGING OF GREEN'S FRUIT GROWER AND OTHERS.—The monthly publications, *Garden and Farm* and *American Girl* have been purchased by *Green's Fruit Grower*, and have been merged into *Green's Fruit Grower*.

GENERAL NOTES.

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—The next meeting of the A. A. A. S. will be held at Washington, D. C., December 29, 1902, to January 3, 1903, and will be the first held during the newly arranged convocation week as arranged and agreed to by more than fifty of the more prominent American universities.

At the recent annual meeting the following were elected to the named offices for the ensuing year: Pres., Dr. Ira Remsen, Johns Hopkins University; Gen. Sec'y, H. B. Ward, University of Nebraska; Permanent Sec'y, Dr. L. O. Howard.

A ROCKERY FOR ALPINE PLANTS.

This old association has given ample evidence of its power and unqualified value to science, yet but few realize the magnitude and broad scope of its work. Every one interested in any branch of science should learn more particulars of the advantages of membership.

TO KEEP CHICKENS FROM FLOWER AND VEGETABLE GARDENS.—It is said that in Los Angeles, Cal., there is an ordinance imposing a fine for allowing chickens to run on other people's property. Now they will have but to restrain the proverbial small boy, birds, insects, diseases, and growing weeds to make the gardener's task an easy one. The owners —not the chickens—are fined.

MONOTROPA UNIFLORA.

It is supposed they are essential to each other's existence. This may be correct so far as the *Monotropa* is concerned. We find the dense ball of roots closely interwoven with the mycelium of a fungus,—but evidently the same fungus is abundant in the rotting leaves around without any Indian Pipe growing with them, and owing nothing to the "pipe," as symbiosis would imply. Our earlier botanists were excusable for supposing that such a specimen as illustrated here was attached to the roots of the Vacciniums beneath; but a careful dissection will show no attachment.

As to how the fungus operates, Dr. Charles Mohr may be quoted from his great work, "Plant Life of Alabama": "Immediately after their (the seeds') germination, the rootlets of these plants are infested by the vegetative threads or spawn (mycelium) of a fungus, which, as the plant develops, fastens itself upon every root, finally enveloping the root-stock with a thin film, the higher plant (*Monotropa*) drawing its nourishment solely from the elaborated food of the fungus."

There is yet much to be learned about these behaviors of plants. *Sarcodes sanguinea*, *Hypopitys* and *Monotropa*, all seem to have their "elaborated food" from the same fungus and are yet all essentially different in color, and may therefore be reasonably charged with some hand in the elaboration.

Our plant has not been able to get many changes in its nomenclature. Previous to the time of Linnæus it was classed with *Orobanche*, the Broom-rapes. Even Catesby, in the "Natural History" already cited, figures it as *Orobanche Virginiana*. In the reformation of botany, Linnæus had a habit of constructing his new names from the terms employed by his predecessors. Morison had termed the plant *Orobanche Monanthos Virginiana*, and Plukenet *O. V. flore-cernuo*. *Monotropa* is but the equivalent of "a single curving flower,"—and this seems more definite than the one usually given, "the summit of the stem in flower turned to one side or drooping." The single flower, indeed, seemed to the earlier botanists a striking difference from the numerous flowers of *Orobanche*. Errors, however, creep in even under the most careful watchfulness. In the citations in the work from which the descriptions are quoted, Dr. Gray, one of the most accurate of bibliographers, cites Lamarck 352 instead of 362,—and Plukenet Fig. 2 instead of 7.

It is yet a question whether the Indian Pipe is an annual or a perennial. The latter character is usually ascribed to it,—but we never find the mass of rootlets larger than figured here, which is evidently but of one season's growth. It once bloomed in Scotland. Dr. Hooker says, in his "Exotic Flora," wherein at page 85 he figures the plant, that it came up with other rare things in a box of earth received from Montreal. This could scarcely have been from seeds. It is probably one of those plants we know as biennial—plants taking a year to mature, and then flowering to die. The plant has made its way over many parts of the earth,—and the chief agent in the distribution has probably been the wind. Growing among decaying leaves, and the seeds being very small, when attached to a dry, decaying leaf it could be carried long distances.

It has not made a figure in polite literature, though attempts have been made to signalize it as the ghost of some other flower, notably the hyacinth; but floral ghosts, at least in poetry, have not been able to tell us much of their fellows in ghostdom. Mrs. Orcutt calls attention to a few lines written by Miss Catharine Beecher:

"Pale, mournful flower, that hidest in shade,
'Mid dewy damp and murky glade,
With moss and mould,
Why dost thou hang thy ghastly head,
So sad and cold?

* * * * *

Perchance thy pearly earth-bowed head
Is bending now above the dead,
With dewy eye,
Soft mourning o'er thy treasure fled
In evening's sigh."

Catesby gives birds and flowers all on the same page,—and he associates our plant with the snow-bird, which, considering the snowy hue of the Indian Pipe, is well associated with a lover of snow in bird-life.

EXPLANATION OF THE PLATE.—1. Root and full specimen from Montgomery County, Pa., furnished by George Redles. 2. Flower, showing the arrangement of the two pairs of sepaloid bracts. 3. One of the sepals. 4. Stamen enlarged. 5. Capsule, with recurved appendages between the filaments. 6. Flower with upper bracts detached.

Prepared by THOMAS MEEHAN.

THE WILD COLUMBINE.

A woodland walk,
A quest of river grapes, a mocking thrush,
A wild rose or rock-loving columbine
Salve my worst wounds.

RALPH WALDO EMERSON.

WILLOW TREES AND LIGHTNING.—I just read in an account of an electric storm in Holland that, on the property of J. Korenvaar, a willow tree was struck by lightning, by which the tree was split from top to bottom. Besides, I have seen lots of willow trees that bore the marks of being struck by lightning. So the well-known gardener in the *Cleveland Leader* must be mistaken that willow trees are lightning-proof.

In Holland, the Lombardy Poplar (*Populus dilatata—P. fastigiata*, in American usage—) is often used as a lightning-rod and is planted near haystacks and isolated farm-houses.

This poplar has the habit of growing nearly vertical, with the branches in an upright position ; as soon as the rain falls the water runs along the branches and forms along the stem a constant stream of water from the top to the ground. When lightning strikes in the vicinity, the tree being the highest object has the best chance of being hit; and when the lightning strikes the tree it finds in the stream of water which flows down the stem a safe conductor towards the ground. Of course, the stream goes seldom in a straight line, and places where the limbs join together the flow of water takes often another direction. The limb may be doomed, but the haystack is saved.

Of course it gives only a very rough protection and does not work in all cases. If this theory is correct, it will work somewhat in an opposite way with willows, especially the weeping variety that we see so frequently here. When the rain comes down, the tender branches bending under the weight, and the water is not as by the poplar led towards the stem, the lightning is guided by the water towards the smaller branches and not towards the large limbs, so when it does any damage to the tree it will be only on the smaller branches and will not be so much visible as in other trees which are more open and let the water go down more in the middle of the tree.

Jersey City, N. J. P. OUWERKERK.

SOME PROMINENT LOUISIANA FLOWERS.—In mentioning the names of a few wild plants of this locality, I am tempted to head the list with *Schrankia uncinata*, which grows in great profusion on the banks of the Mississippi, and is a favorite with every one, especially the children, who love to gather large bunches of its pretty, rose-colored, Acacia-like flowers. *Bignonia radicans* at the present time adds life and charm to the trees of the swamps, while growing underneath will be found the showy *Hibiscus Moscheutos;* and, in more open and dryer spots, the Maypop, *Passiflora incarnata*, which, when it cannot find some support to raise it above the ordinary herbage, will trail along the ground and ripen its fruit to delight some lover of its slimy pulp later on. While talking of plants that need support, yesterday I saw several patches of the American Dodder, *Cuscuta Americana.* I don't know what there is about it to make me like it, whether it is its bright, orange-colored threads that are such a contrast to the surrounding shades of green, or whether its cheeky assurance—germinating and growing in the ground in its early stages, but as soon as it can fasten itself to one of its neighbors it says "good-bye," to Mother Earth, "I can get along very well without you ;" or perhaps it's the remembrance of many years ago, while on a boy's botanizing trip in the country, the teacher of the class discovered one of the English species growing on a Furze bush, and explained its life-history to us ; for from that day to this I have always been pleased at the sight of a patch of Dodder. Another favorite of mine, which is still in flower, but not now as beautiful as it was a few weeks back, is *Parkinsonia aculeata*, a small tree

with Acacia-like foliage and pretty, yellow and brown colored flowers, which reminds me of some of the small-flowered Oncidium. And yet another favorite is *Acacia Farnesiana*, which gets one mass of its sweet-smelling little yellow balls in early spring, which the Creole boys and girls gather and sell by the pound to the French perfumers, who extract from them their favorite perfume, *Cassie*. *Cleome pungens* is very common, and the cottagers are not content with seeing it growing by the wayside, but have to transplant it to their gardens, and I should think it would give them as much pleasure as any exotic. The spider lily, *Pancratium maritimum* (or *Caribæum*) is another aristocrat of the Louisiana swamps, which gets a place of honor in New Orleans gardens—and well it deserves it, for what a magnificent display it does make in early summer, and more or less throughout the summer.

New Orleans, La. GEORGE THOMAS.

[It is quite noticeable that of the nine plants mentioned as prominent in the Louisiana flora, three are of the *Leguminosæ* family,—or very closely related, for some systematists have cut off the mimosa section. Yet this proportion is not surprising when we consider how largely *Leguminosæ* figures in horticultural circles at large. The *Schrankia* and *Acacia* belong to the mimosa section, containing the plant generally accepted as the Sensitive Plant, *Mimosa pudica*. *Schrankia* also has somewhat sensitive foliage, and is commonly called Sensitive Brier,—indeed, the same character pervades the larger family, being found to a degree in several common Cassias. A distinguishing feature of the *Schrankia* is the numerous small spines on its stems and seed pods. This plant also brings to mind a cultivated plant not very common, *Acacia* (*Albizzia*) *Julibrissin*. Its rose-colored flowers are bunched into small balls like the other Acacias and the *Schrankia*. The flowers show but little more than their long, silky stamens. *Acacia Farnesiana*, mentioned by Mr. Thomas, will doubtless be recalled to many of our readers as the Popinac, a flower extensively used for perfumery purposes, and indigenous in many tropical countries of the globe. The Editor well remembers a large specimen, which some readers may have seen, standing in front of the palatial Hotel Ponce de Leon, in St. Augustine, Fla. The yellow flowers are borne in such profusion as to certainly attract attention. The Acacia differs from Schrankia besides in the prickles by having very numerous stamens to the individual flower.

Parkinsonia aculeata is an evergreen, thorned member of *Leguminosæ* proper, and may be seen often as a hedge plant in the warmer climates.—ED.]

ROSES WITH GREEN FLOWERS.—A friend of mine told me of a rose-bush with green blossoms. Can they really exist? E. B.

Rome, N. Y.

[Yes! They are not strictly uncommon as curiosities. They have no ornamental value, hence are never brought into great prominence, though we think an enterprising florist once tried to put some on the market.

The phenomenon is easily explained. Morphologically, the petals of a flower are mere leaves in other forms and colors. The green petals of "green roses" are a nominal return to the true nature of the petals. Such "petals" are always small, more nearly corresponding to the size of ordinary rose-leaves, and this fact aids in rendering them less conpicuous on a plant.—ED.]

THE SENEGAL BAOBAB TREE.—It is said by travelers that the fruit of the Senegal Baobab tree is used by the natives to curdle milk. As it is also called "sour gourd" and cream-of-tartar tree, the curdling is probably due to an acid; and other vegetable acids are also known to be so used. But it seems that other vegetable products that are not acid will also curdle milk. In northern Mexico I was once served with a palatable dish of cooked "cheese" that the mistress of the house told me she had herself curdled with the juice of berries, some of which she showed me. They were fruit of a *Solanum*, apparently *S. heterodoxum*. She was an intelligent woman, and spoke of that use of the berries as a common custom in Mexican families. Like other fruits of the nightshade family, they had no perceptible acid taste; and the curd which they produced had a consistence similar to that which is produced by rennet. Possibly the action upon milk of the juice of that and other non-acid fruits is similar to the action of rennet, which is thought by some investigators to be a kind of ferment.

C. A. WHITE, in *Science*.

placed. The *Eulalia* seen further to the left, in the corner of the plate, is a well-known, indispensable plant for gardening in wet places.

The illustration should not be left without marking the mass of *Forsythia* seen to the left at the end of the walk. It invariably makes a huge mass of foliage useful in many places, besides brightening earliest spring by its profusion of yellow bells.

DEAD WOOD IN YOUNG PLANTS.—Remove all dead branches from plants as soon as they show. By so doing more space for development is given the growing shoots, and there cannot be a possible drain on the plants from half-dead wood.

SUCKERS ON GRAFTED PLANTS.—It frequently occurs that weak-growing plants are grafted on stronger stocks, and suckers from the latter are likely to spring up and rob the scion. These should be promptly removed. The writer has frequently observed suckers on the stock of Kilmarnock Weeping Willows that have eventually killed the weeping portion by appropriating all the nourishment.

QUALITY IN NURSERY STOCK.—It costs a great deal of money, a great deal of time, and a great deal of experience to grow plants properly,—and these are facts which more intelligent persons are beginning to realize. The prices of plants to-day have not been lowered by improved methods and better knowledge; instead, better plants are grown, both in kind and in condition, at greater expense to the producer and to the purchasers. Certain kinds of stock can be grown with greatest ease and consequent cheapness, and unbelievers having this class in mind often fail to recognize quality. The Carolina Poplar has been instrumental in deceiving the public as to the value of trees. Only a couple of years is required to rear a tree of respectable size for transplanting, and the cost is but a few cents. They can be grown on almost any ordinary nursery ground, and need little or no care. How different with an oak, or even a Norway Maple, where five to ten years are invariably spent getting the seedling to a suitable selling size! And what of the labor in transplanting, pruning, and straightening? Is it possible to bring the three plants into competition except as regards quality and desirability? It is here that the nurseryman meets with discouragement and he is tempted to sell cheaply and cut down his expenses correspondingly to the detriment of his stock. Training, health, vigor, and careful handling make a tree that gives satisfaction to the purchaser and make him ignore extra expense, and this more generally recognized will bring more confidence between the nurseryman and his customers in their dealings.

ROLLINSON'S GOLDEN ARBOR-VITÆ.—There are quite a number of evergreens which are more beautiful in winter than in summer, because of the pretty color of their foliage at that season; and not the least among them is the Rollinson's Golden Arbor-vitæ, *Thuya* (Biota) *elegantissima*. In the summer time it has golden-colored tips, especially when making new growth. As soon as cold weather comes the whole of the exposed foliage becomes of a flame color, and is especially brilliant when exposed to the sun. In fact, when overshadowed by trees or buildings, it colors hardly at all. Its best position is one entirely open.

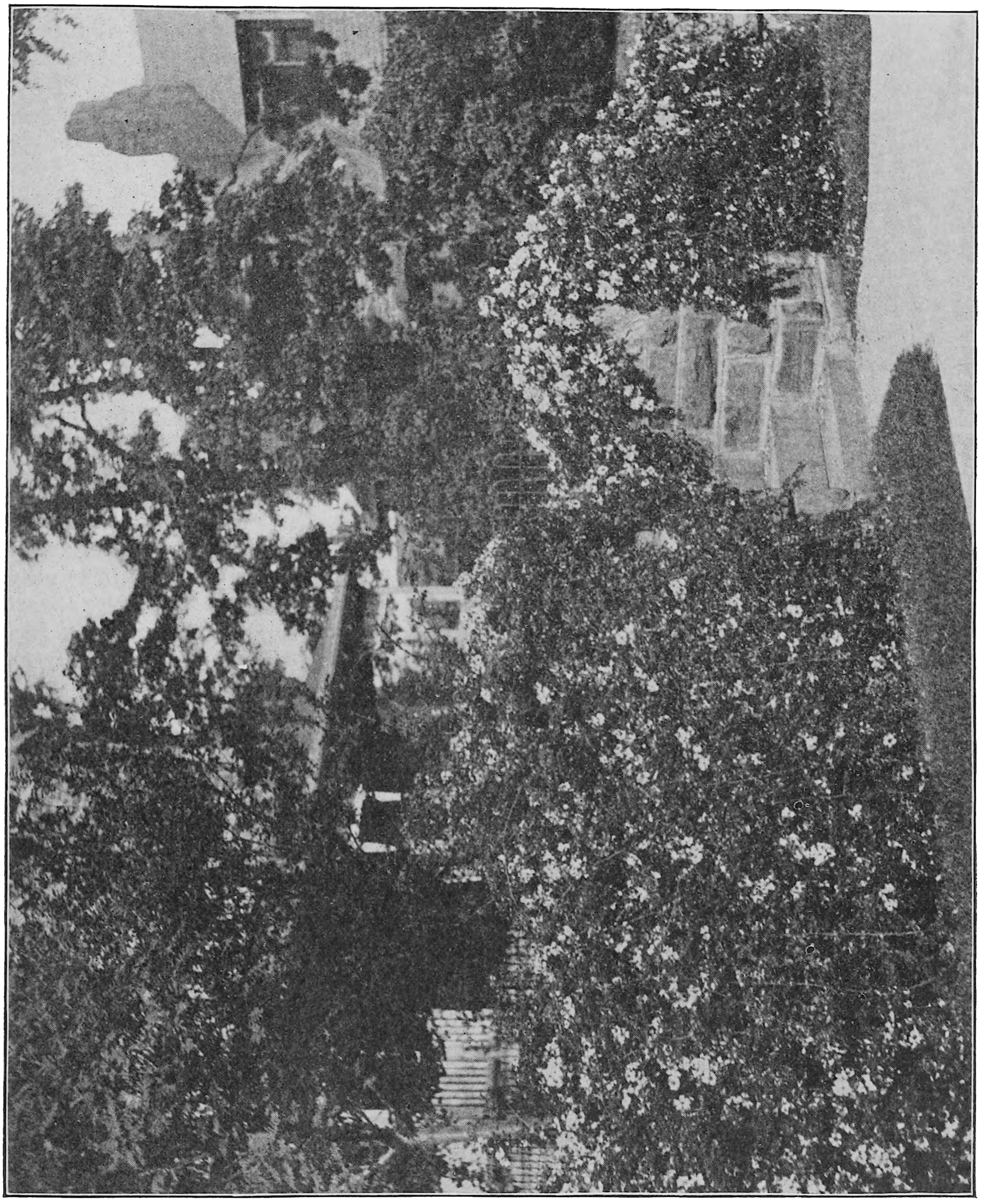
The habit of growth of this arbor-vitæ is intermediate between the upright-growing common Chinese and the bushy, slow-growing golden arbor-vitæ. Set out of a height of about two feet, it would be some years before they would be four.

Good companions in the way of pleasing winter colors are the *Retinispora pisifera aurea*, the foliage of which becomes of a golden yellow, and the Douglas' Golden Juniper. The color of the latter is of a rich, golden bronze, something unique among evergreens. This juniper is of a rather flat, spreading growth, fitting it for positions which the more upright evergreens could not fill. K.

ROSES FOR LOW WALLS.—There have been climbing or trailing roses desirable for planting to low walls and similar objects for years. The good old *setigera*, Prairie Queen, *microphylla*, and the like, have supplied the want in times past, and answered the purpose well. When *Wichuraiana* appeared, some few years ago, there was something better for the purpose than had been known before. A low-growing, creeping rose, with bright evergreen

leaves and clusters of white flowers in season, such as this, was the very thing desired. So closely did it keep to whatever it was planted, whether but the ground, a mound, or a wall, that, as it grew, it presented an almost level sheet of bright, shining foliage. In many respects it is yet the best rose where a close carpet of green is required.

At a later date there came a batch of hybrids, raised between *Wichuraiana* and various other kinds, and these, as may be surmised, partake of the character of both parents. These hybrids comprise such sorts as Universal Favorite, Pink Roamer, Jersey Beauty, Evergreen Gem, etc., and are now in general use. The illustration shows a rose-covered wall, mostly



HYBRID WICHURAIANA ROSES ON A LOW WALL.

of hybrids as mentioned, with some of the common *Wichuraiana* with them. Is it not a pretty picture? The hybrids lie hardly as close to the wall as *Wichuraiana* does, and this free growth is more pleasing in the present case than would be the wall covered with a close-fitting vine. These hybrid roses are mostly pink or white or shades of these colors, some double and others single, and are profuse flowering in their season.

A good time to prune these roses is soon after flowering. Then new shoots are made, which give a mass of bright foliage through the season. If too long or straggling, as some may become, they should be shortened in partly with the advent of spring.

JOSEPH MEEHAN.

CLEMATIS PANICULATA AND FLAMMULA.—C. B., New York City, inquires the names of two flowers sent for identification. One proves to be *Clematis paniculata* and the other *Spiræa callosa*. The flowers of the former are often confused with *C. Flammula*, but the latter blooms a couple of weeks earlier and is a poor grower in comparison.

CALCULATIONS FOR A HEDGE.—The proper distance apart for the setting of hedge plants is often raised. A correspondent thinks that as privet plants grow so rapidly, one foot apart would be a good distance; but it must be remembered that the privet is a rather erect grower unless pruned frequently at the commencement, and if set any great distance apart it will take quite a while and many prunings to make them broad at the base. If set six inches apart, the spaces will fill up more quickly and the plants be permitted to make height. If a very dwarf hedge be wanted, then distance makes little difference, as the frequent sharp prunings will take place anyhow.

SHOULD TREES BE PRUNED WHEN TRANSPLANTED?—Perhaps no other gardening subject has more diverse opinions expressed in relation thereto than has that of the pruning of trees when transplanted.

Experienced men whose opinions are held high will declare emphatically against the least amount of pruning. On the other hand, equally authoritative opinions come out favoring pruning all branches in to a "pole." Others have added to the latter advice to prune the roots in to a stub. Whom shall we follow? The safest course, perhaps, is to follow no one absolutely. Learn all you can by hearsay, then use your own common sense and good judgment towards making the plants feel at home and quite comfortable. Finally blame no one for bad results—not even yourself, provided you profit by your experience.

The course followed by MEEHANS' MONTHLY has always been to recommend the frequent practice of pruning, and though it is but recently occasion was taken to give advice of this nature, the importance of the subject as the Editor sees it seems to require further remark.

A recent western meeting of prominent horticulturists had this same subject before them, and while the opinions differed, the majority favored pruning.

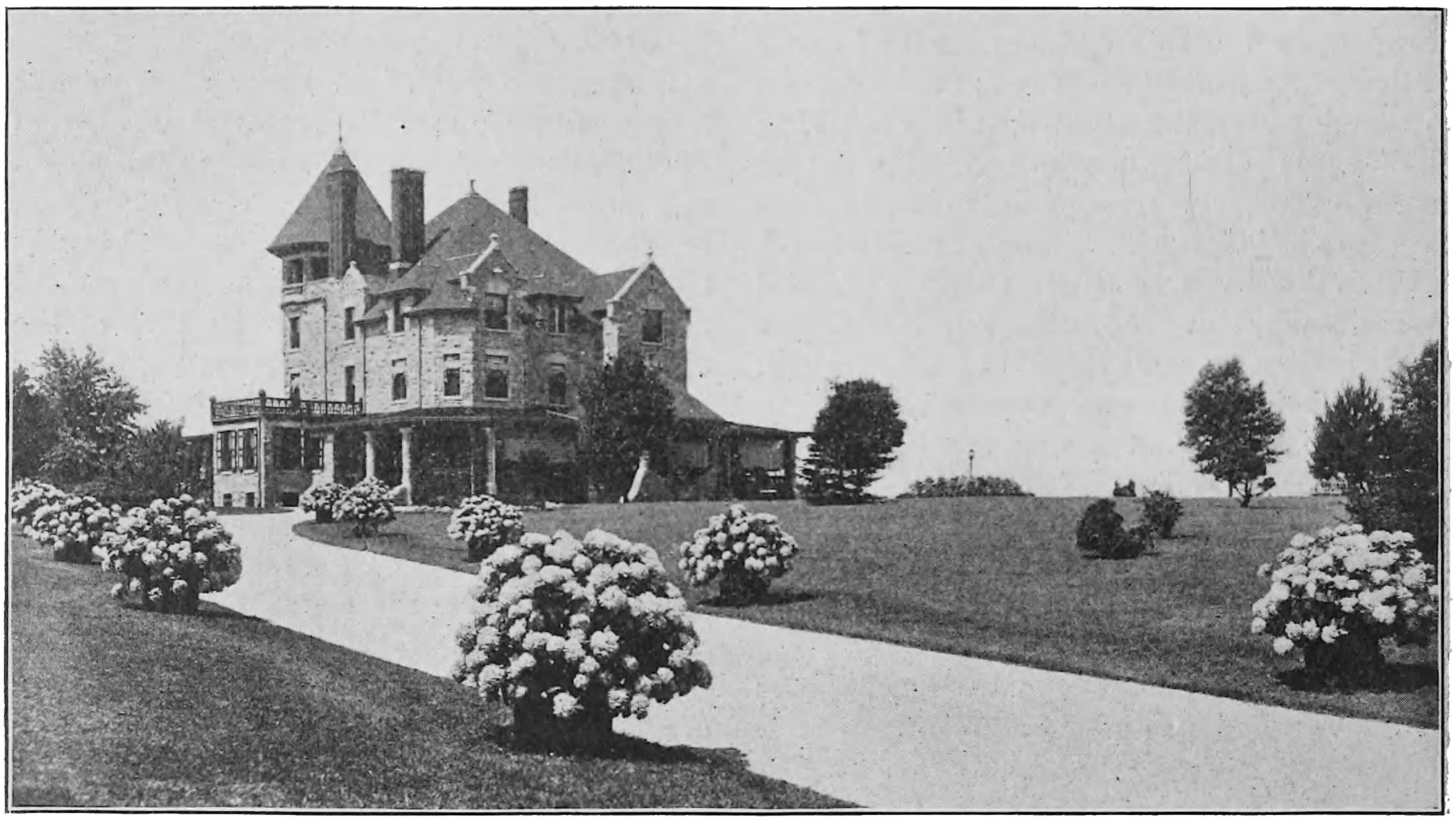
The fact is, there is good and bad pruning, and good and poor work in planting. It is not any one condition that is to insure success. But a good effort all round will bring success out of generally poor conditions.

In justification of pruning, it is safe to say that the loss of a few roots, which must almost invariably follow even careful digging, is a removal of just so many mouths for feeding the tops of the plants. Therefore, the tops being the consumers, remove, by pruning, enough to balance the producers, so to speak. Of course, the better the root supply, the less call there should be upon the tops.

But now enters the question of making new growth. Can the pruned branches make new growth as quickly and as well as that which was removed—the young, vigorous growth? Here is where a good knowledge of different trees is well, and really needful. Some trees will quickly make buds where none before existed; others having buds in dormancy stubbornly refuse to start them on and would never think of making new ones. Then, too, there is a difference between the classes of wood on the same tree. Some two-year-old wood will not bud easily; the young wood holds all the power. As a general thing, the soft woods, like the Soft Maple, willows, poplars, tulip tree, etc., cannot be pruned too severely,—they bud easily from any age of wood; while the hard woods must be treated cautiously. Of the latter, the fresh, young, strong wood

THE HARDY FLOWER GARDEN.

REARRANGING GARDENS OF HARDY FLOWERS.—It rarely happens that the first planting of beds of hardy flowers is exactly right. The first year of growth, a close watch should be kept and notes made of undesirable features that can be corrected at the proper season. The colors may not harmonize in some parts of the beds; or the distribution of flowers to keep a good general display at all times all over the beds may not be good. Some plants may have failed to survive the transplanting, and these can usually be filled at once by plants from pots or by annuals.



HYDRANGEAS AT "SUNSET."

CLEMATIS DAVIDIANA.—In speaking of Clematis, one usually associates the name with climbing plants, as most of the genus are of that habit. *Clematis Davidiana*, however, although usually classed with herbaceous plants, may be better described as a trailing shrub, as the stems are slightly woody and do not die down in the winter. Of its merits as a garden plant, there can be no question.

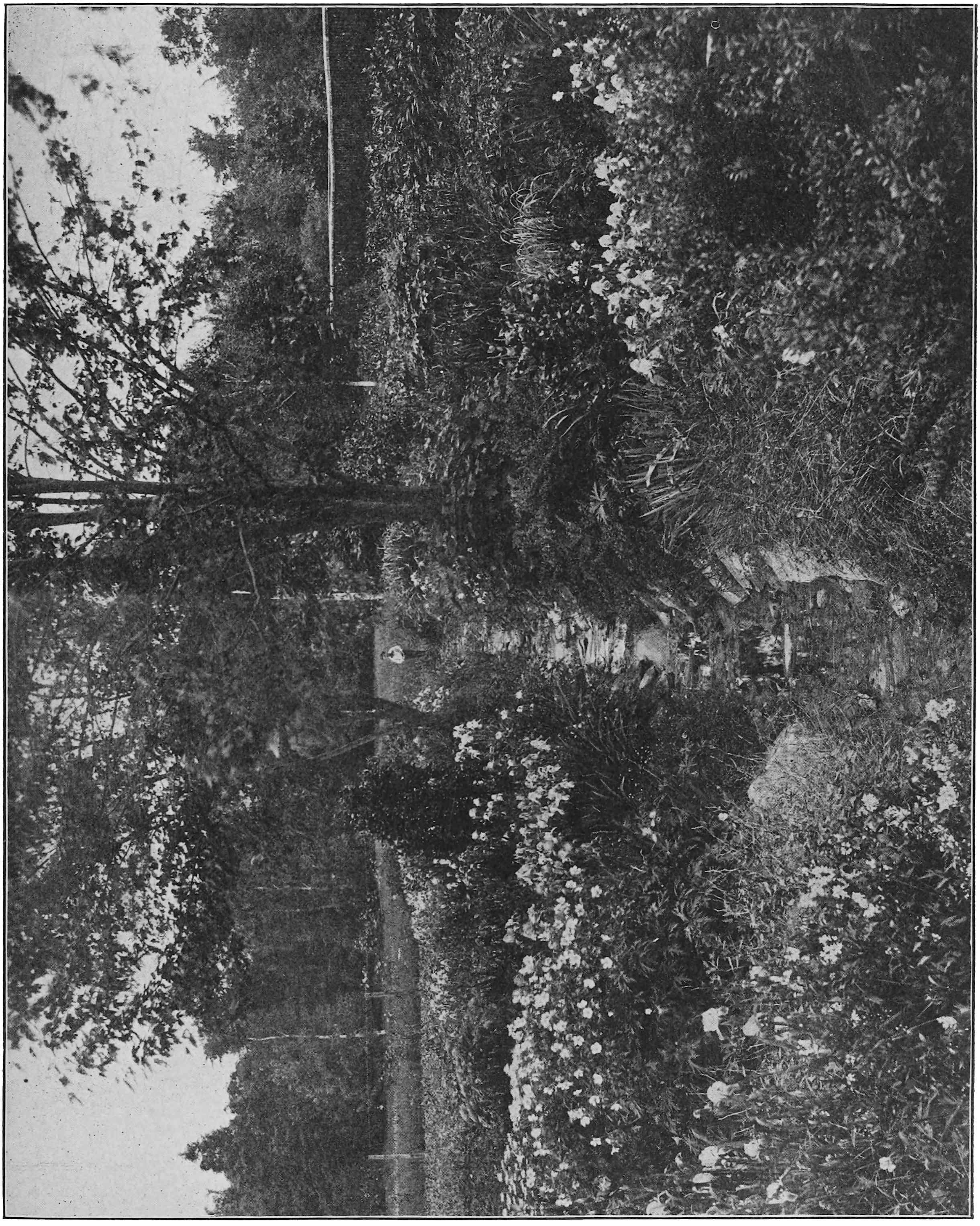
The flowers are a good violet-blue, fragrant, and very similar in size and shape to the single hyacinth, and are produced in abundance through August and September. Perhaps the only objection that can be raised against it, is the flowers being produced in whorls at the axils of the leaves, and the foliage, being abundant and large, the flowers are not so conspicuous as they otherwise might be. Many of the hardy perennials have a very weedy appearance when out of flower, and a few plants of the type of *Clematis Davidiana* go a long way in redeeming the borders from this undesirable feature.

The better way to raise them is from seed, which germinates in about thirty days from the time of sowing. The seed should be fresh and sown in gentle heat about March, seedlings pricked off into boxes as soon as they show the character leaf, and, when large enough, potted off into two-inch pots before planting out into their permanent quarters. The plants bloom the second year from seed, and seem to thrive best in a damp, partially shaded situation.

E. HEMMING.

ARABIS ALPINA CRISPA.—The new crisped Arabis is distinct from the well-known type, *alpina*, but not a whit better. In fact, the smaller flowers and growth are less showy and luxuriant.

BEAUTIFYING WASTE GROUND.—The series of pictures recently appearing in MEEHANS' MONTHLY showing effective usage of hardy flowering perennials in rock gardens and waste places is continued here by another beautiful scene sent by Mr. William Woods,



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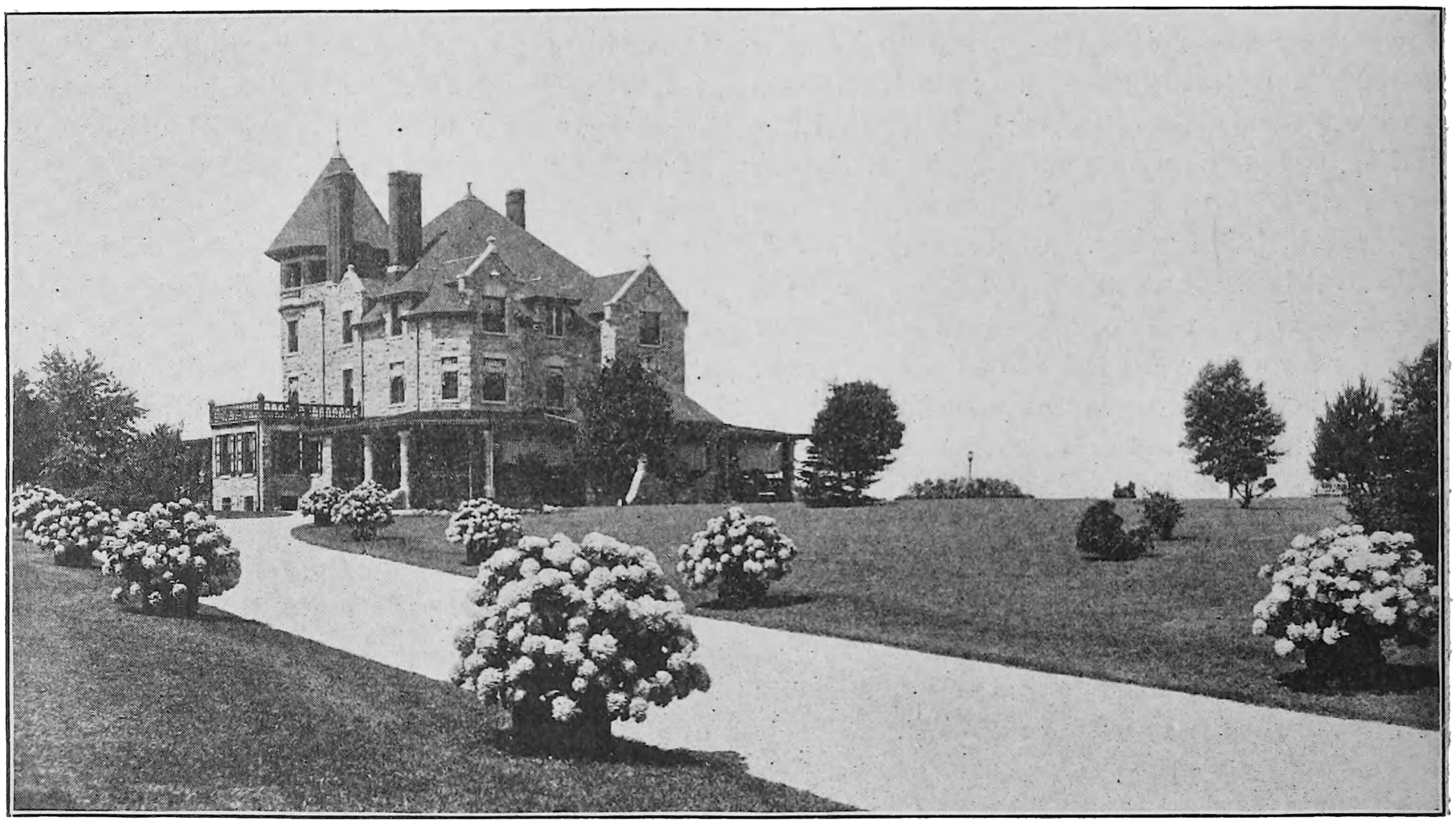

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Interlaken, Lenox, Mass. The photograph shows an open ditch made to carry off the water which floods down from the highlands above. Stones were placed against the sides and on the bottom to keep the soil in place, and these are made rather natural-appearing by the overhanging of plants here and there. As an aid to others who may like to make use of the idea, Mr. Woods kindly gives the following list of the plants used. Four years ago, this swamp was planted.

The sides are planted with the following:

Phlox amœna,
P. subulata,
Arabis alpina,
Achillea tomentosa, etc.,
Pæonies,
Phlox,
Geranium sanguineum,
G. album,
G. pratense, single and double,
G sylvaticum,
G. Ibericum, etc.,
Spiræa palmata,
S. alba,
S. elegans,
S. venusta,
S. rivularis,
Hemerocallis aurantiaca major,
H. Middendorffii,
H. flava,
H. Thunbergii,
and others,
German Iris,
Japanese Iris,
Helianthus,
Funkias,
Monardas,
Aconitums,
Spiræa aruncus,
Œnotheras,
Pyrethrums,
Polygonums,
Anemones,
Rudbeckias, pinks on the front,
Veronicas,
Digitalis,
Epilobium,
Erigeron,
Hesperis,
Heuchera,
Hieracium,
Hypericum,
Lysimachia,
Grasses and Shrubs.

ARALIAS AND YUCCAS IN ROCK GARDENS.—One of the best effects in rock gardens can be had by planting *Aralia spinosa* as a background. It will grow in quite shallow soil, and throw its suckers through every crevice in a rock, with which they almost seem to merge. Its tropical, palm-like appearance, with its clusters of white flowers, make it all the more valuable.

Yucca filamentosa planted in the foreground among rocks, and *Aralia spinosa* beyond, make a very desirable combination and a pleasing effect.

PAUL B. RIIS.

Thompson, Conn.

SATISFACTION FROM BEDS OF HARDY PERENNIALS.—Any one familiar with hardy perennials will admit their desirability over annuals as a class. They have permanent value and command a much greater interest. But too much is expected of them the first year, as a rule. Persons used to setting out Coleus and Geraniums, which are well-started, neat, and showy from the beginning, look for the same in the herbaceous perennials, forgetting their entirely different character.

The perennial bed's first year should be considered a preliminary planting. Carefully arranged and furnished with good plants it will look fairly well; but it is probable there will be found places in the bed that can be improved—touched up or rearranged just a little. With this end in view, the plants should not be set too closely together; let them have room to display their individuality. A herbaceous perennial bed or border can be improved year after year by the addition of a few things that take the owner's fancy. It is a constant source of pleasure.

A mistaken course is to be over-anxious about getting kinds that individually bloom all summer. There are some such, but their exclusive use narrows down the assortment very greatly. It is the opportunity to have variety and changing interest as new flowers appear that makes the whole scheme attractive.

HOLLYHOCKS IN BORDER GARDENING.--Hollyhocks are among the plants that need no introduction; every one knows and likes them; they are an essential part of the old-fashioned gardens so popular to-day. While they can hardly be misplaced in gardens, there are places where by reason of their habit of growth they are particularly pleasing to the eye. The illustration with this (see page 145) shows a good use of them as placed irregularly along the border. Regularly distanced, or a complete row, would not be so attractive. As they are, the upright spikes break the line of the wall, the tops showing prettily from the terrace side as well.

The scene surrounds the handsome residence of Mrs. Chas. Wheeler, Bryn Mawr, Pa., and is but a small section of a very pretty estate. With the hollyhocks are planted a miscellany of hardy perennials, some few of which are usually in bloom at all seasons. The entire border planting is just sufficiently natural to guard the formal terrace gardening within.

PLATYCODON MARIESII.—One of the neatest and prettiest perennials is the dwarf *Platycodon Mariesii*. It grows barely a foot high, has fine green foliage at all seasons, and flowers almost all summer. The old flowers pass away without leaving any dead petals or stems.

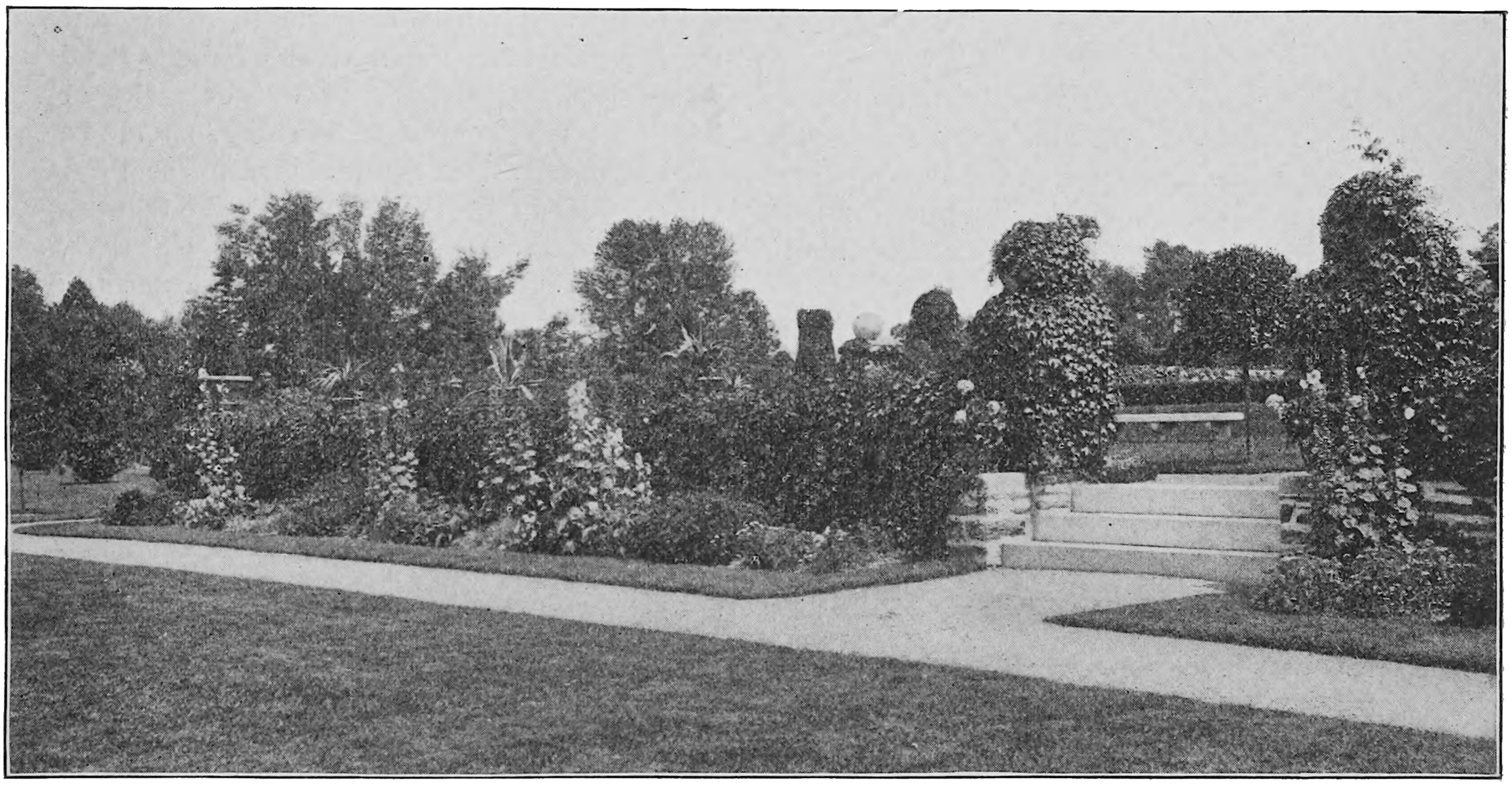
PHLOX DIVARICATA.—*Phlox divaricata* is distinct from all other *Phlox* under cultivation. It grows about a foot in height, and produces a beautiful display of large, blue flowers in spring.

FRUITS AND VEGETABLES.

PLANTING PEAR TREES BY ROADSIDES.—The rural resident frequently confronts himself with a question usually difficult to answer satisfactorily, namely: If I plant fruit trees along the road, a space I would like to utilize profitably, will I get the fruit or will the passer-by? Near large cities, it is frequently not simply the casual stroller along the road who picks up several of the tempting fruits to eat as he goes, but it is planned by some to go out for a mess of apples or pears for stewing. The question may as well be answered favorably for the planting, except for the annoyance depredations are sure to cause. The planting of Kieffer Pears might be advocated. No boy first sampling one before he filled his pockets or bag would pick up a second. Though it may so seem, this is not slandering the quality of the pear, but rather points to the fact that unripe it is worthless to the taste, and it must be picked from the tree and ripened to insure the really fine flavor it is capable of possessing. Some doubters will say the Kieffer flower is not perfect and requires pollen transferred by natural means from near-by trees of another variety; but evidence is abundant that it will fruit at such a great distance from other trees the doubt need not be entertained.

THE PERSIMMON AS AN EDIBLE FRUIT.—Why is it the persimmon is not more highly regarded as a fruit? True, it is difficult to get it at just the right stage to avoid the "pucker"; but well-ripened and frosted fruit most persons would surely consider delicious and worth a little trouble to produce. Possibly it is because the ripe fruit is difficult to handle.

What is known as the Japanese Persimmon is more encouraging to grow than our native ones in respect to the size of the fruit, being fully twice as large. But it will not thrive further north than Philadelphia, and even there it is uncertain. The flavor is a little less sweet, but with less "pucker."



HOLLYHOCKS IN SEMI-FORMAL GARDENING.

Of late, attention has been given to the improvement of our native persimmon, and it has been attended by more or less success. Some are almost or entirely seedless, and absence of most of the puckering is noticeable. One promising variety has been named Gold Drop, for which is claimed earliness coming into bearing, extreme hardiness, unusually large and good shape, fine, yellow color, flesh melting, and with but little pucker when ripe.

The American Persimmon makes a handsome tree ornamentally considered. It has dark, green leaves that remain on late in the fall.

BIOGRAPHY AND LITERATURE.

THANKFULNESS.

Mortal! bethink thee—if at close of day
Both bird and flower their grateful homage pay,
This in sweet odour, that in tuneful song
What thankful strains should flow from human tongue!
Oh think what noble mercies crown their days,
Then be thy life one ceaseless act of praise!

ANONYMOUS.

RECENT BOTANICAL APPOINTMENTS.—Professor Haven Metcalf, who for the past year has been fellow in botany in the University of Nebraska, has been elected to the professorship of botany in Clemson College, South Carolina.

Professor F. C. Waugh, of the experiment station at Burlington, Vt., has been called to the chair of horticulture of the Massachusetts Agricultural College at Amherst, Mass.

Professor Rufus W. Stimson has been elected president of the Connecticut Agricultural College. He has been acting president since last September. —*Science.*

PRACTICAL FORESTRY.—By John Gifford, Assistant Professor of Forestry, New York State College of Forestry, Cornell University; published by D. Appleton & Co., New York.

"Practical Forestry" is professedly a book for "beginners in forestry, agricultural students, woodland owners, and others desiring a general knowledge of the nature of the art." The art, science, and industry of forestry is herein couched in an ordinary but interesting and concise manner, that guarantees the fulfilment of the book's mission. The author sets out to make all things clear by defining many terms that while common are but seldom properly understood. In this he either errs in one instance or fails to convey a proper impression where he speaks of the Australian "bush" as "undergrowth." "The bush" is the rankest, tallest kind of trees, and not the scrubby undergrowth Americans are familiar with. The chapter "Wood-lots on farms, forest estates, and the relation of silviculture to the kindred arts of agriculture, horticulture, and landscape gardening" is very valuable and encouraging for a general, increasing adoption of good forestry practices. Quoting from these pages, we are advised that "Poor land on a farm may be used to better advantage for forest than for any other purpose. Even in very fertile districts there are few farms without some uncultivable land. Land which is extremely dry or wet, or rocky or sandy, or land subject to washing, should be used for forest." It is a pleasure to see Prof. Gifford deal a blow to the abuse of the theories respecting forests and rainfalls. He says, "As to the influence which the forest exerts on the precipitation of moisture, there is considerable doubt. The extent of this influence is still merely a matter of opinion, and is, in short, a case of 'not proven.'" At the same time he accepts the facts that under certain conditions moisture is gathered and accumulated, something that any one can perceive and believe. The author does not deal all with theories, but covers the entire field of forest formation, in nature and as practised by man. Interesting chapters are devoted to such kindred industries of producing sugar, turpentine, and wood-pulp. The reviewer cannot avoid calling attention to the statement of facts concerning the consumption of wood-pulp: "The newspaper referred to, and there are many others which use quite as much, consumes, therefore, in one year, all the spruce on 16,225 acres of land as it grows naturally in our northern mountains. At this rate our spruce supply will fail in the course of time." The figures are of greater magnitude than any one would suppose, and they press the importance of forest reservations and private, economical forestry. Though the material benefits derived from the chapter on "Forest trees and products of the tropics" will be small for the average reader, it is one of most interesting reading. The book closes with a descriptive list of Federal and State forest reservations,

State, and not so widely distributed in other territory. Mrs. George Brooks Bigelow, of Boston, is the secretary of the Society.

AMONG THE WATER-FOWL—a popular narrative account of the water-fowls as found in the Northern and Middle States and Lower Canada, east of the Rocky Mountains, by Herbert K. Job; published by Doubleday, Page & Co., New York.

By aid of a camera, a quarter-century of observation amongst birds, and an interesting manner of telling his story, Mr. Job has given the public a book that will appeal to every one. Water-fowl may not be an attractive subject to the average person, as a rule, yet the author's presentation in this instance is sure to have interested perusal.

IRRIGATION FARMING—a handbook on the proper application of water in the production of crops; by Lucius M. Wilcox, editor of the Denver *Field and Farm;* revised and enlarged edition. Orange Judd Co., New York.

Mr. Wilcox, in his "Irrigation Farming," gives abundant evidence of broad and deep knowledge of his subject. He not only details every phase of preparation for irrigation, but its application as well. The needs of all kinds of plants and farm crops are ably presented, and the effects of irrigation in different soils explained. The chapters on reservoir construction, windmills, artesian wells and drainage will be found valuable by all who farm large areas. "Irrigation Farming" is not without entertaining features, notably in the tracing of irrigation practises back to ancient times—more than 2,000 years B. C.; and in a different degree to the detection of fallacacy in the divining-rod. Mr. Wilcox is an irrigationist of the "first water"; to his reasoning it is a cure-all for all problems, industrial as well as purely horticultural.

SECRETARY OF THE MASSACHUSETTS HORTICULTURAL SOCIETY.—Mr. W. P. Rich, one of the editorial board of *Rhodora*, has been chosen secretary of the Massachusetts Horticultural Society, succeeding the late Robert Manning. This is an important post, the society being the largest and most influential active organization of its kind in the United States.

OFFICERS OF THE INTERNATIONAL SOCIETY OF ARBORICULTURE.—The International Society of Arboriculture has for its president General William J. Palmer, of Colorado Springs, Colorado; Vice-President, James H. Bowditch, Boston, Mass.; and secretary John P. Brown, of Indiana.

BERGAMOT.—In my younger days, *Mentha citrata* was known as Bergamot in Massachusetts.

WM. F. BASSETT.

Hammonton, N. J.

GENERAL NOTES.

INTERNATIONAL PLANT-BREEDING CONFERENCE.—An international conference on plant-breeding will be held September 30 and October 1 and 2 by the Horticultural Society of New York, of which Leonard Barron, 136 Liberty Street, New York, is the Secretary. A number of papers and illustrated lectures will be presented, the authors representing men prominent in horticultural circles here and abroad. The Society mentioned has shown eminent capabilities for arranging for and carrying out conferences and interesting exhibitions of various order, and everything points to a successful issue.

PESTS TURNED TO PROFIT.—The press informs us that grasshoppers are doing great damage to crops in Utah, and that one county is paying $1.00 per bushel for the insects. Being plentiful, the opportunity for harvesting a good crop of "hoppers" is good if the worker be quick. Traps of various kinds have been made to facilitate the catching, displaying considerable ingenuity in the methods. The crowning effort is to put the hoppers to profitable use, and the best suggestion seems to be to compress them into cakes for animal food. Surely this is a cropping out of the Yankee blood in our western States.

A NEW DEGREE—"FOREST ENGINEER."—Cornell University will hereafter confer the degree of "Forest Engineer" in place of "Bachelor of the Science of Forestry."

RAIN AND PLANT GROWTH.—The abundant rains in Pennsylvania this summer have caused all plants to grow strong and able to withstand a rigorous winter.

IRIS SPICATA

positæ to which the Blue Blazing-star belongs are also arranged for self-fertilization, but the flowers behave in a very different way. The style branches are very long and slender, extending usually far beyond the mouth of the floret, and not seeming to carry any pollen out of the united column of anthers, as in the other case. But by watching the development of the cut specimens, and opening with a lance the florets in various stages of development, the process is found to be an unusually interesting one. As in the other case, the apex of the style meets with such stout resistance from the staminal crown of anthers that it is bent in many forms. At times the long, slender lobes of the style spread the segments apart in a kind of bow-legged manner,—in other cases the lobes do not spread, but together with the style bend in a serpentine line. Finally the pistil forces its way through the anthers ; the lobes of the floret break suddenly apart, the lobes of the pistil expand, and a little cloud of pollen floats in every direction. These actions are simultaneous, and occupy but a few seconds,—and they give much pleasure to the attentive observer.

But points of interest do not rest here. In most plants we look for the stigmatic surface at the apex of the pistil or its lobes. In this the receptive glands are at the base of the lobes It may puzzle the teleologist to find the purpose served by these prodigious elongations, which give the feathery appearance to this section of *Compositæ*. We note, however, that the result is self-fertilization,—and the singular fact is ascertained that an order comprising about one tenth of all the species of plants on the earth has, with perhaps few exceptions, no use for insect agency in the fertilization of its flowers.

A point worth noting is the order in which the flowers expand. As the spike ascends in growth the leaves are arrested in their development, and become mere bracts in the axils of which flower buds are formed. These buds grow to certain size and then rest. When the final limit of growth has been reached the terminal bud resumes growth, and the whole head of florets assume activity. The growth-energy then proceeds downward, reaching every head successively till all have been perfected. This method of flowering is common to all in the natural order of *Compositæ*, but is not so strongly presented to us as in the spicate species of *Liatris*. Nature, however, seems to delight in showing that she can reach the same object in many different ways. In this case, though there is a rest and decurrent resumption of growth in the flower buds, this condition does not extend to the flower heads. In these the lowermost perfects its development first, and this rule continues until the central floret is reached, which is the last to come to perfection.

In its botanical history the plant has had its vicissitudes in common with many other species. Linnæus found it associated with the thistles, and he removed it to the genus *Serratula*, and described it as *Serratula tuberosa*. In 1789 Schreber, in his edition of Linnæus' "Genera Plantarum," separates them under the name of *Liatris*, the derivation of which is unknown. Our present species, *Liatris spicata*, was so named by Willdenow, in 1797, and has been retained by all authors since. There is great variation among the individuals of each species, and it is not uncommon to find a mixture of species in many herbariums. Usually the heads are solitary in the axils of the bracts, as seen in our picture ; but occasionally these will develop to branches, with branchlets along the line, giving it a paniculate character. Usually the leaves are grass-like, as in our specimen, but at times, especially in Kansas, they remind one of a Sweet William. These forms have had names as species by different authors. It has figured in the Botanical Magazine as early as 1811, wherein it is said of it: "The remarkable length of the stigmas is perhaps common to the genus, though this character would exclude some species that are at present arranged under it. Though not comparable with the fragrance of *Liatris odoratissima*, the leaves of this plant are by no means destitute of an agreeable odor when dried." In regard to this, however, Mr. J. A. Sanford, of Toledo, Ohio, notes at p. 219 of the fourth volume of the *Botanical Gazette*, that it is rather the flowers than the leaves in the dried specimens that give out the fragrance.

EXPLANATION OF THE PLATE.—1. Root and root-leaves of a plant from Eastern Pennsylvania. 2. Section of the same flower stem in which a branching tendency is apparent. 3 Upper portion of the flower scape of another plant from New Jersey.

Prepared by THOMAS MEEHAN.

WILD FLOWERS AND NATURE.

AN OCTOBER SUNSET.

The Sun beamed in a deep October sky
With splendor such as when the Grecian feigned
Apollo drove his car across the blue
And limpid depths, and with a mystic light
Shone on the mountain snows and azure sea
And the Arcadian meads and dells.

HOWARD WORCESTER GILBERT.

THE LEAF-CUTTING BEE.—Several years ago my rose bushes had their leaves badly cut by some insect, as shown in the illustration on page 104. By watching closely, I at length saw the insect—some kind of a bee—at work. It worked in a great hurry, seemed to examine the leaf and determine where it wished to cut, then it did the cutting very rapidly.

Some time afterward, I saw an article on "Leaf-cutting Bees," in *Popular Science* [vol. xxxiii, No. 10.—October, 1899—Science News Co. Publishers, 108 Fulton Street, New York]. Illustrations were given, showing the insect at work, and the use made of these fragments of leaves.

I failed to see any wisdom displayed in their cutting every leaf from a tiny new rose just from the east, when there were great bushes of wild roses and common hybrid perpetuals near-by. It may be that the insect wished to save that little rose-bush from a lingering death, and tried to kill it quickly.

Once, as I watched a leaf-cutting bee at work, it cut off the portion of leaf on which it stood. It fell a short distance but recovered itself and flew away still clutching its bit of leaf. S. T.

In reference to insect-cut leaves, I have often seen the leaf-cutting-bee at work in the summer-time, and have also observed in greenhouses that the small pipes of the size of ¼ or ⅜ used for relieving the heating pipes of air are often used by these insects as a place for laying their eggs. She first puts in a few of the leaves, making a plug, then places her eggs above this and covers the balance of the tube with more pieces of the leaves. This form of plug is often found by florists in their greenhouses and is a source of annoyance to them, as they have to dig the plugs out in order to relieve the heating system of air when they start their heat in the fall.

Regarding the unfinished cuts, they were probably not finished because the bee was frightened away. FRED T. OAKES.

New York.

The leaf-cutting is done by a bee somewhat smaller than, and not greatly different in appearance from, the common black honey-bee. It is more gray in appearance, and body more flattened than that of the honey-bee.

The sections cut from the leaves are used for building nests, under ground usually.

When completed, they are in the form of cylinders, about the size of a lead pencil and usually about one inch in length. You will notice by referring to the illustration with Mr. Ross's query, that there are two sizes of pieces used. The longer ones form the sides, many being used to complete the walls, while the circular pieces form the ends or partitions in these cylinders, or as I used to express it when a boy, "they were the wads to hold the load in."

The "load" is propollis or "bee-bread," in which the eggs are deposited and which forms the food for the young bee. These little cartridges are often placed several in one cavity. I have noticed various plants used for the purpose, viz., the rose, Wistaria, grape, beggarweed, and other legumes; and one lady complained they kept the blossoms cut off her geraniums.

I think there is no reason why two large cuts should be made on one side the leaf and one small one on the other, but merely a circumstance, and the fact that some of the cuts were not completed only indicates that the bee was probably disturbed during its work and never returned to the unfinished piece.

The cutting is done with the mandibles, scissor fashion, and only requires a moment's time.

It isn't likely that the insect has any regard for the life or welfare of the leaf or plant, but simply used that which was most convenient and best suited to its use.

If Mr. Ross could watch them at work, he could then understand why a segment of the circle is left outside the leaf. The bee, alighting on the edge of the leaf, cannot throw its head back far enough to start a circle, but must necessarily start in almost at right angles to the edge of the leaf.

There is still more room for thought. You will notice the oval cuts are wider at one end, also that the narrow end starts in almost at right angles and is more accurately made than the other. The bee begins at the small end of the cut, usually working toward the centre of leaf, thus the piece is inclined to get wider; and when the proper length is reached the bee is obliged to make an abrupt turn to come out right.

C. E. PLEAS.

Chipley, Fla.

DOUBLE LILIUM SUPERBUM.—I did not know that the lily ever became a double flower until I met, this morning, a *Lilium superbum* with four rows of petals. Of the six stamens, three had been converted and the other three remained with distorted anthers as though arrested in the transformation. The styles were apparently perfect. Where did the adventitious petals get their material? The stem bore three flowers all precisely alike. L.

Cape May, N. J.

[The only case of a double-flowered lily recorded by the writer. is a Tiger Lily received from Japan. L's case is interesting from a morphological point of view. There should be normally six floral leaves, and six stamens, —but there were twelve floral leaves. In most cases of an extra development, we can see that something had been arrested when in the normal state,—but nothing appears in the lily flower that would indicate a possibility of a double supply of petals. But when we remember that one flower on a plant is but an epitome of the whole infloresence, and note the inflorescence of *Lilium superbum*, we see that the main stem is in a measure spicate, with innumerable bracts and floral axes.

The flowers will have the same character. Though only six bracts have been developed to form the perianth, there are others wholly suppressed. The extra six are therefore not developed from nothing, as at first sight would appear; but from arrested bracts that are usually wholly suppressed from view.

We learn from this that the lily is founded on a spicate plan,—and we might reasonably look for spicate species though we had no actual knowledge of their existence.—Ed.]

MONOTROPA.—Many years ago, in Vermont, in the shade of the woodland, I sometimes found the singular *Monotropa*, the subject of the colored plate in the September issue. It was when fresh in the form of a pipe; the stem and bowl were perfect. But when dry, the white flower became black and the nodding flower-cup, so like a pipe bowl, straightened out and there was no more of beauty. The mass of roots were considered by some medicinal as a remedy for fits.

The encyclopædia says: "*Monotropa* is a parasite growing upon the roots of pines and other northern trees." As my personal observation goes, the roots belonged to the plant from which it sprung, and seemed a mass of irregular shape, growing but a little below a decaying cluster of leaves such as often accumulate about the roots of trees.

Looking in Gray's Botany to refresh my memory, I find I had put the following note in it:

"Prof. Thomas Meehan, in *Botanical Gazette* for February, 1884, suggests that the Snow-plant of Yosemite is not a parasite, but may be a saprophyte—a plant of the *Monotropa* type, feeding on decomposed vegetable matter, the roots of the Snow-plant being a coralline mass like the *Monotropa*."

Beautiful plant of the forest glade,
In pure white stem, leaf, and flower arrayed,
No tint of purple and gold or green
In all thy graceful drapery seen,
But just robed like an angel in white,
Art not thou too an angel of light!

Modestly earthward bending thy brow,
Wind-swept tree-tops wave o'er thee now,
Giving the sweet breath of morn to thee
And a shelter from intrusion free;
Thus sheltered often the humble are,
Their wings kept white as the morning star!

MRS. E. E. ORCUTT.

THE WANING YEAR.

With autumn tints the woodlands glow,
  Across the fields the soft winds blow,
A golden haze envelops all.
  And drowsily the faint notes fall,
Of distant sheep-bells, on the ear,
  Low, sweet, and distant, but yet clear;
And springing from the sun-browned sod,
  Flames forth the gilded Goldenrod.

L. C. BISHOP, in *Park's Floral Magazine.*

DEUTZIA GRACILIS ROSEA FOR FORCING.—In a recent number of MEEHANS' MONTHLY, I saw a few notes on *Deutzia gracilis rosea*. I forced some plants of this *Deutzia* last winter, and had them in flower for Easter. They kept their color well. Just before the flowers opened, I placed them on the shady side of some tall plants, keeping them from the direct rays of the sun. The plants were two years old, lifted from the open ground in the fall, potted and placed in a cold frame with glass and shutters on. I think I brought them into the greenhouse early in February,—night temperature about 48 degrees. They were syringed two or three times daily. When they began to break, I placed them in the full sunlight, previous to which they were under a bench. Just before the flowers opened, I placed them in the shade of these taller plants. The main points are to start with a low temperature, keep them in the shade, and syringe until they break; then place in full sun at once. (This is most important.) Just before the flowers open, place on shady side of some tall plants; give as much light as possible, but not the direct sun. I would refer inquirer to *Deutzia Lemoinei*, and *Deutzia Lemoinei compacta*, and especially to *Deutzia venusta*. There is a revelation for any one who forces this latter shrub for the first time, especially if they do it well,—and there is a right and a wrong way to force them. I consider them all improvements on *gracilis*, pretty as that shrub is. Keep the temperature 48 to 54 degrees at night and higher temperature when started to grow.

WILLIAM WOODS.

PLANTS FOR A TALL HEDGE.—I want a hedge that will be thick and at the same time reach a height of ten feet or more. What is recommended for a hardy plant? F. A. B.

Baltimore.

[Privet is the favorite for such requirements. The Osage Orange is likely to disappoint unless very carefully trimmed twice a year. The Cockspur Hawthorn and *Viburnum prunifolium* are suitable and very desirable in every respect. —ED.]

REJUVENATING OLD CHESTNUT TREES.—Large chestnut trees may often be improved and placed in a good, vigorous condition by being cut to the ground and allowed to sprout from the old stump. Thus a strong young tree, the growth of which may be carefully followed and its habit guided, will soon replace the old, apparently worn-out tree. This practice is often followed by orchardists who want to clear an old piece of woodland containing such trees. Those to remain are marked at proper intervals – say 50 feet apart. The timber can be made profitable and a new chestnut orchard growth is had without replanting. The thrifty young growth offers opportunity for grafting the large-nut varieties.

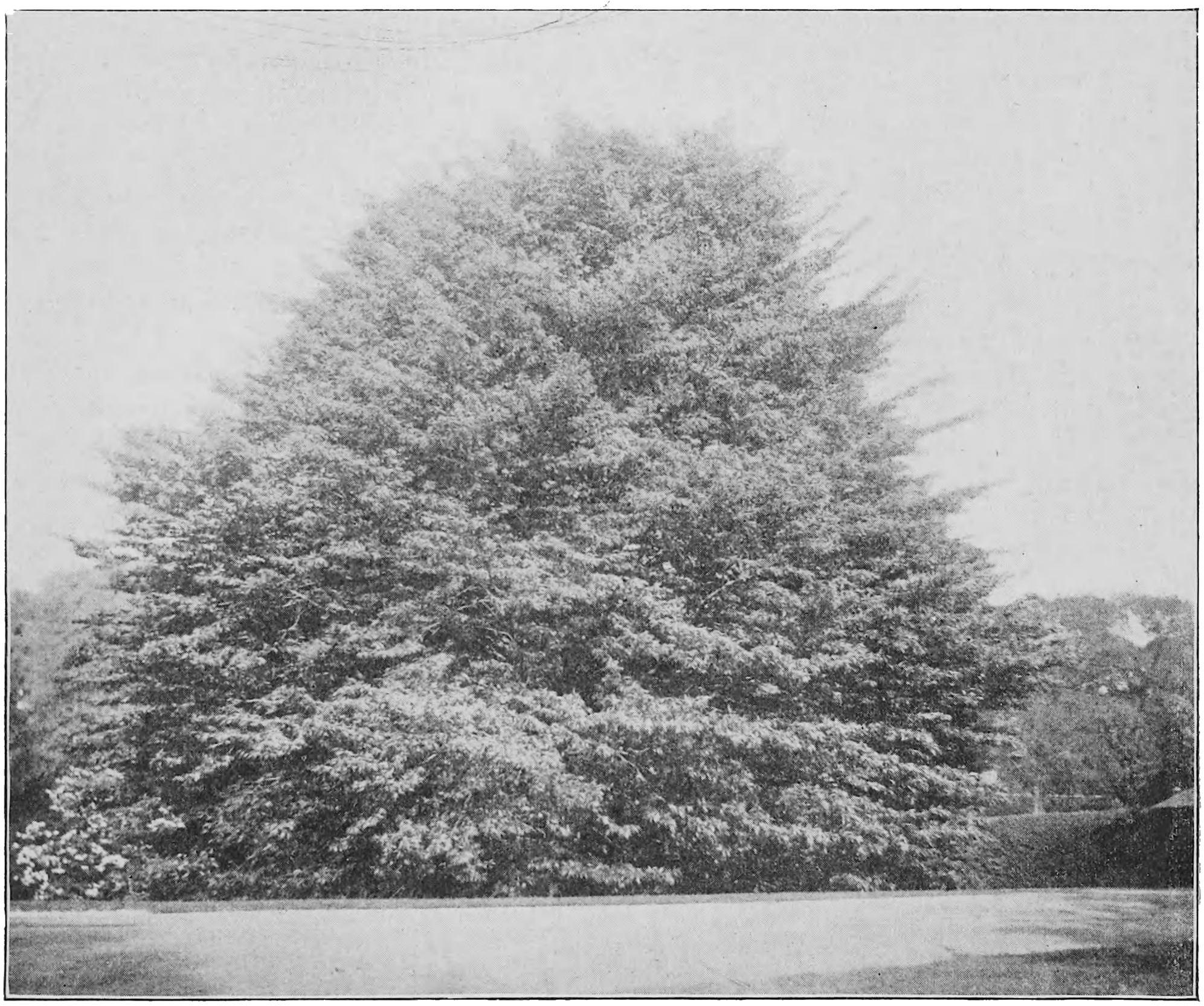
PAULOWNIA IMPERIALIS.—That grand Japanese tree, *Paulownia imperialis*, though perfectly hardy about Philadelphia, seems less so further north. Even in Philadelphia its seedlings suffer for a year or two, freezing back partly in winter; but after it has a good, strong, hard shoot, no further injury comes to it. Further north it kills back for several years, and in such cases is valued only for the immense leaves it produces, some of them from eighteen to twenty-four inches in diameter. But the planting of larger subjects than seedlings should be made. It is more than likely that were this done many grounds could be adorned by a tree of it which do not now possess one. The flowers of this tree are in huge

panicles, and are visible in their embryo state the autumn previous, on the ends of the branches. They expand in the closing days of May; and besides the beauty of the panicles of trumpet-shaped, blue flowers, their odor is delicious, and so penetrating that the air is perfumed for squares around.

The seeds are extremely fine, and, where trees have stood some time, it is common to see seedlings spring up in places near them, and in this way it is becoming naturalized in some places. K. M.

ENDURANCE OF A WELL-TRIMMED NORWAY SPRUCE HEDGE.—The good condition of a hedge for a long time much depends upon carefulness and correctness in trimming. A Norway Spruce hedge on the property of Jay Cooke, Philadelphia, planted in 1866, is still in most excellent condition though the ground has not once been enriched. Throughout this time, the trimming has been ably done by the gardener, Julius Brust. It pays to know how to prune a hedge properly.

FERN-LEAVED BEECH.—Beeches are trees that invariably make handsome specimens if given room, and the room does not have to be more than "just sufficient," for it is aggressive enough to make its way. But as a general thing, a beech should be given more than enough room, as it properly attains such noble proportions as to make it absurd not to allow it prominence.



FERN-LEAVED BEECH.

The Fern-leaved Beech illustrated in this issue is one of the largest the writer has ever seen, and is located on the property of Edw. S. Buckley, Esq., Chestnut Hill, Phila. Its general appearance in outline and massiveness makes it a specimen of grandeur; but we miss in the picture the fineness of the fern-leaved foliage, which one must see on the tree itself

to fully appreciate. As with the common green-leaved Japanese Maple, there is something peculiarly attractive about the ferny foliage.

The Fern-leaved Beech should not be confused with the Cut-leaved Beech, which is quite similar, but with leaves a little coarser and with less twigginess in growth.

HUGE HEADS OF HYDRANGEA FLOWERS.—Mrs Wm. H. Whitridge, Glencairn, Md., may well feel proud of her Hydrangea plants that produced flower heads 36 inches in circumference and 17 or 18 inches in length. Can any one record larger?

The secret of producing these large heads is in the encouragement of strong, sturdy growth. Sharp pruning in winter produces heavy canes.

WHY EVERGREENS SOMETIMES LACK HARDINESS.—The following question was put at a meeting of the Chestnut Hill (Phila.) Horticultural Society and was answered by the Editor by request:

"What was the cause of the general heavy loss of evergreens and evergreen shrubs during the winter of 1900 and 1901, and why?"

"I do not pretend to answer the question just stated authoritatively, because I have no facts nor records upon which to base my reply. But there are certain well-known physiological facts that seem to support what I advance, and in various forms it is also upheld by others.

I am of opinion the failure was largely due to a lack of moisture in the soil—not necessarily during the winter, but possibly in the fall or late summer previous.

To have the reason for such disastrous results following insufficient moisture fully understood it is necessary to explain that in a dry air or wind and in the heat of sunlight the moisture in a plant is being continually evaporated. The stronger the drying wind, and the more intense the heat, the evaporation is so much the greater. The pores of leaves from which evaporation takes place are more numerous than those of bark, therefore evaporation from evergreens, and especially from broad-leaved evergreens, is undoubtedly greater.

We will all admit that there is a limit to the extraction or evaporation of moisture from a plant beyond which it cannot live, and we are simply to ascertain if there was any unusual force causing excessive evaporation, or if the supply of moisture was insufficient to stand the usual tax. Here is where I am without data; but the principle may just as well be made clear."

The pores through which evaporation takes place are exhilarated and inclined to open in the sun's heat; this may account for what we term the "burning" of evergreens on the south side. This result is further most noticeable in very late winter, when the sun's heat is greater. For two years I have had Rhododendrons exposed to very strong northwest winds, but protected from the sun. They apparently did not lose a leaf.

If a plant could be made to keep full of moisture without being over-supplied in any of its parts, no element could harm it.

To make the most of the argument we should realize,

1st. The necessity for keeping our plants well mulched summer and winter, in order to keep the natural supply of water in the soil, that the plants may have their needs and be less effected by drought.

2nd. That shelter from hot sun, whether it be in time of drought in summer or in late winter, will check drain on the plants' vitality.

3rd. That broad-leaved evergreens, because they expose more surface to the sun's rays, need shelter most.

4th. That having followed the other three provisions, the strongest winds, though they may have some effect, are not to be feared.

THE BABY PRIMROSE.—One of the prettiest little flowering plants, and especially for small cut flower purposes, is known as the Baby Primrose. Its flowers considerably resemble in size and appearance a forget-me-not, but are of a pale-pink color. It is very unlike the Chinese and English Primroses, being botanically *Primula Forbesi*. It is an annual. Have any of our readers found it adaptable to house culture?

CRAB-GRASS.—I wish to put in a plea for the much-abused Crab-grass and other annual grasses, generally looked upon as mere weeds. Almost any good or poor soil will grow these grasses. Allowed to grow and fed in moderation to cows as a green forage, they are very

Bryn Mawr, Pa., formerly the residence of the late George W. Childs, abounds in beautiful scenes and fine specimens. With this we reproduce two photographs showing a fine specimen of the Nordmann's Fir and a good, simple arrangement of plants at the approach to the house.

On either side of the steps shown in the one picture are fine specimens of that unique Japanese tree, the Gingko. They are branching more than is usual for such trees unless they are pruned with that end in view. It is safe to say that for general use there is no more satisfactory tree, considering hardiness and freedom from disease and insect attack; and to this we may add the beauty and novelty of its foliage and lines of growth. In the other picture, to the right of, but beyond the Nordmann's Fir, stands a young Gingko, the growth of which illustrates its ordinary, upright habit.

Appearing beside the large Gingkos are Swiss Stone Pines (*Pinus cembra*), easily recognized by their conical habit, so compact and neat. Unfortunately, to suit the needs of some, they are rather slow in growing, yet it is this that maintains the compactness.

The Nordmann's Fir in the other picture is a handsome specimen, but typical of that species. Few evergreens are more pleasing in color, its dark, rich green holding throughout the winter as well. It stands a low degree of temperature and is a good companion for the Colorado Blue Spruce and Concolor Fir. At times the former will grow with more rapidity than others, and then the appearance alters slightly, the lines tapering more to the summit.

It should be noted that the effective planting of the *Arundo Donax* shown in the September issue is on the same grounds as our present subjects, the illustrations being given with the kind permission of Mr. Drexel.

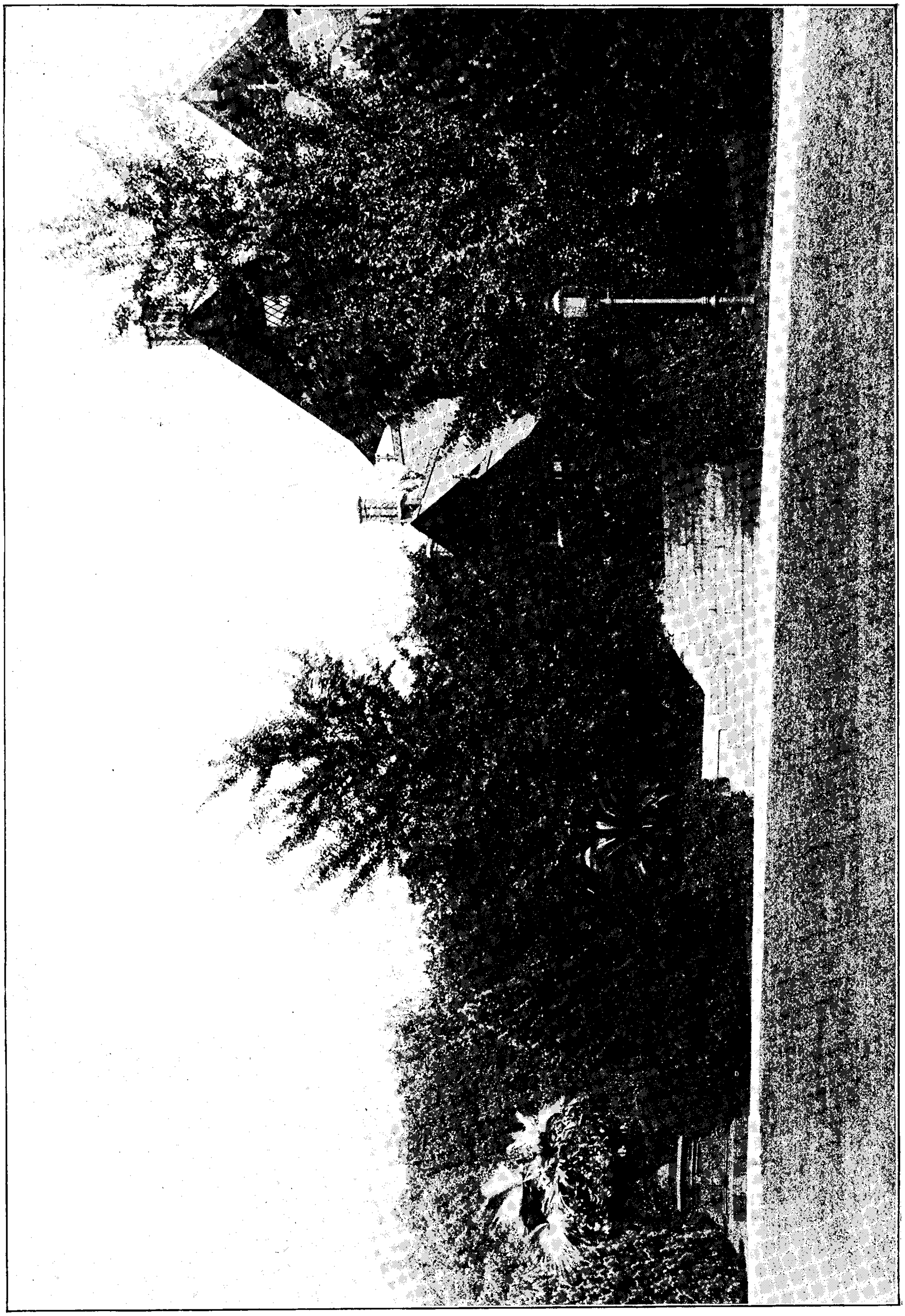
BLOOD-LEAVED NORWAY MAPLE. — Blood-leaved or purple-leaved trees and shrubs are always of use in plantings, if set where the colors contrast well with their surroundings There are numerous shrubs of this class; but among trees the variety is not so large. Prominent among them is the well-known Blood-leaved Beech, often called Copper Beech; and occupying no inferior place is the Schwedler's Blood-leaved Norway Maple. Our illustration shows the beautiful character of its growth. This maple is a variety of the Norway, possessing all the good characters of the parent, in addition to its blood-red leaves in spring. In common with most other blood-leaved subjects, the red color is of the brightest soon after the leaves unfold. It is then blood-red, and at that time the tree is an object of much beauty. As the season advances, the color is less intense, but all the season through there is enough of it to readily distinguish it from the ordinary form. Sometimes towards autumn new growth will start out here and there, and whenever this happens there is a blood-red leafy twig projecting above the older leaves, which is sure to attract attention.

Looking at the handsome-shaped tree our illustration represents, one would hardly think it of the Norway Maple family, for rarely is the common Norway seen so pretty. And here is where a good lesson may be learned. This blood-leaved one is so singularly well-shaped solely because it has been permitted to branch close to the ground, and ample room has been afforded it to develop. Treat the common one in the same way, and a just as well developed tree would result.

Trees often call forth admiration or not according to the position they occupy. Readers will notice how singularly well suited this Schwedler's Maple is to its position, a position a tree of a quite different style of growth could not have filled. JOSEPH MEEHAN.

THE HARDY FLOWER GARDEN.

IRIS VERSICOLOR AND OTHERS.—In the August number, the Editor asks for testimony regarding *Iris versicolor*. It is the only species reported as indigenous to this State, and is quite rare, owing to the fact that we have few marshes or damp places suited to its growth. I have it growing in dry ground, however, and the past season it bloomed nicely, and the plant now, September second, is thrifty and the leaves are as green as the German Irises. It is worthy a place in any collection. I wish also to speak a good word for the European Swamp Iris, *I. Pseudacorus*, which I have no difficulty with, although it stands in a spot that is never very wet and is



GINKOS AND STONE PINES. PROPERTY OF GEO. W. CHILDS DREXEL, ESQ

often very dry, yet this plant is very thrifty and blooms freely. The flower is not large, but the bright-yellow color is very desirable.

I wish also to commend the Grass-leaved Iris, *I. graminea*, with its dark-green, narrow leaves and its rich dark-purple and violet flowers, which, though not large, are very bright and pretty. It is not particular as to soil and is a clean, thrifty plant.

I. setosa and *I. Gueldenstaedtiana* have grown fairly well and have bloomed, but not so freely as the first mentioned. *I. ochroleuca* needs more moisture than I am able to give it, and I think would do well with about the same treatment as required by *I. Kæmpferi*. The Rocky Mountain Iris, *I. Missouriensis*, and *I. cristata* bloomed nicely this spring with only ordinary care,—also several varieties of Siberian Irises. *I. Bohemica*, a slender-stemmed, purple Iris, is quite distinct and perfectly hardy. The Japanese Irises do not seem to do well here, and evidently need a milder climate and moister soil. German Irises deserve all praise for variety of flowers and magnificence of color and ease with which they are managed. I searched long for a pure white Iris. *I florentina* is the one usually sent out for a white variety and none surpasses it in rapidity of growth and freedom of blooming, but it is not a pure white,—and I have found "Silver King" to be identical with it. The only pure white German Iris I have found without any markings, except the orange beard, is *Albicans* or Princess of Wales. This may be distinguished by its twisted foliage. It has been so far a rather shy bloomer, but the flowers are pure, milk white and very beautiful. *I. Virginica*, *I. verna*, *I. longipetala*, and *I. aurea* have grown for me for several years without blooming and evidently are not quite at home here.

A. T. D.

Topeka, Kansas.

[It is claimed that "Silver King" is a variety of *Germanica*; and that its main distinctions are earlier flowering and a greater abundance of blossoms.—Ed.]

SOME DESIRABLE HARDY HERBACEOUS PERENNIALS.—Mr. William Woods, Lenox, Mass., writes regarding the August number of the MONTHLY: "The plate of *Monarda menthæfolia* is very pretty, and the article treating of this plant is very interesting. In my notes on rock gardens, I should have written *Hemerocallis flava* with its bold, clear, yellow, sweet-scented flowers. *Fulva* is not clear yellow." It seems possible that the proof-reader may be to blame for not detecting a typographical error, and that Mr. Woods' MS. was correct.

Mr. Woods has a large collection of perennials, many of which are quite uncommon. In addition to those mentioned in earlier issues, the following are considered so desirable as to be worthy the reader's attention:

"There are some very beautful hardy plants now in bloom. Quite a mass of *Saponaria Caucasica flore plena*, with its large, double, rose-pink flowers; *Heliopsis* "B. Ladham," a stout, vigorous, bushy, free-flowering *Heliopsis*—the best *Heliopsis* I have seen; *Veronica Virginica; Veronica Michauxi*, a tall, handsome, blue-flowered *Veronica*; *Veronica scabiuscula* is also a tall, very handsome *Veronica; Aconitum Lycoctonum*, pale-yellow; *Aconitum pyrenaicum* (very pretty), pale-yellow; *Veronica maritima; V. maritima alba; Geranium pratense fl. pl.; G. sylvaticum fl. pl.; Heuchera brizoides*, a very strong and free-flowering *Heuchera*, flowers rosy carmine; *Epilobium angustifolium album*, a very fine plant; *Cephalaria gigantea*, grows eight feet tall; *Cephalaria speciosa*, over six feet tall. These two *Cephalaria* have been a very fine sight, with hundreds of sulphur-yellow flowers. *Sidalcea Listeri* and *S. malvæflora* are very fine, with their pink and rose-colored flowers. *Astilbe rivularis*, growing in an ideal place, is over six feet tall, and the very large, compound leaves and showy panicles of flowers make this *Astilbe* a very noble plant. As I look out of the window, I see growing over the stones that border the garden, the following good rock plants in flower: *Campanula rotundifolia; Thymus Serpyllum*, both the purple and white variety; *Achillea santolinoides*, grey foliage, now full of white flowers; *Tunica Saxifraga*, with its pretty pink flowers; and *Saponaria ocymoides splendens*. Lots of flowers have gone, but there are more to come."

A GARDEN OF COSMOPOLITES.—A good many ingenious minds have delighted themselves since time immemorial in securing tokens and remembrances of places and people out of which to construct some startling whole

There were many flowers whose birthplace I have forgotten or neglected to learn, but the idea as a whole, if not pleasing to an artistic sense, was at least novel and interesting. It was a spot where one might lose one's self in dreamy reminiscences of many nations. Who knows? Perhaps the souls of the human associates of their floral antecedents had transmigrated, and were here congregated in this cosy garden, holding converse with each other,—a strange medley of human histories—of which the half has never been told. A foolish, as well as queer idea, of course, but are we not passing through an epoch of wild hallucinations and emotional inconsistencies? But at least the garden was a unique conception, far ahead of crazy quilts and their ilk, and should this idea come to be universally followed out and become a fad, should not we see gardens of all sorts of cosmopolitan associations—political gardens, society gardens, religious gardens, theatrical gardens, historical gardens, mountain and valley gardens, perhaps "trust" gardens, in which there would be sure to be many "corners," and possibly gardens commemorating rogues and murderers, to such lengths do prevailing fads carry us. And should we not find, treasured up in a quiet corner overshadowed by some luxuriant growths, a sly bit of sweet-scented rosemary "for remembrance" as Ophelia has it, as a keystone of this garden of memories?

Ashtabula, Ohio. ALBERTA A. FIELD.

FRUITS AND VEGETABLES.

MELONS UNDER GLASS.—A faint echo of bygone days came to the old gardener last spring by way of *American Gardening*, when he read that a large number of melons, from the garden of Com. Elbridge T. Gerry, Newport, R. I., were in evidence at the meeting of the New York Farmers at the Metropolitan Club. It reminded him of the days when he was learning the mysteries of his craft in the Old Country, and it made him look back to the time when he started out, full of courage, to win fame and fortune in the New World; how he prided himself upon his ability to take charge of vineries, peach-houses, melon and cucumber pits, and orchard-houses; what remarkable success he had with wall fruits and espaliers—but, alas! he knew not the field in which his labors were cast.

The New World sprang many surprises upon him; he did not realize that this was the land of plenty; that peaches in season could be bought for a few cents a basket; likewise that grapes, cucumbers, melons, and the choicest fruits were the poor man's food, and that all his skill in those particular lines was useless, except where he could apply the principles to the growing of other things.

It gave the old gardener a thrill of pleasure to think that possibly in America the gentle art of growing fruit under glass will become popular, and a gardener's reputation depend upon his ability to color the Muscat of Alexandria grape, the size of his Gros Colmans, the flavor of his melons, and his never failing to pick his first strawberries and cucumbers for Easter Sunday.

Mr. Gerry's gardener seems to have gone one better, showing melons at that time of year,—but then, again, the Americans always do go one better. Perhaps it is because the sun is kinder than in the Old Country.

It hardly seems credible that melons will ever be grown profitably under glass, but if the American gentleman takes an interest in his garden and wants them, it behooves the gardener to prepare himself to produce them.

Houses mostly used for growing melons are either lean-to or three-quarter span, with a southeast aspect, and should be furnished with sufficient pipe to maintain a minimum temperature of 60°.

Bottom heat is very necessary to success. This can be furnished either by fermenting material or pipes; if the former be used, the manure should be well prepared by turning it over occasionally to get rid of the rank gases before taking into the house to form the beds.

A suitable compost is a mixture of strong, fibrous loam, well-rotted cow manure and silver sand, thoroughly mixed together, placed in heaps at regular intervals along the hotbed and made very firm.

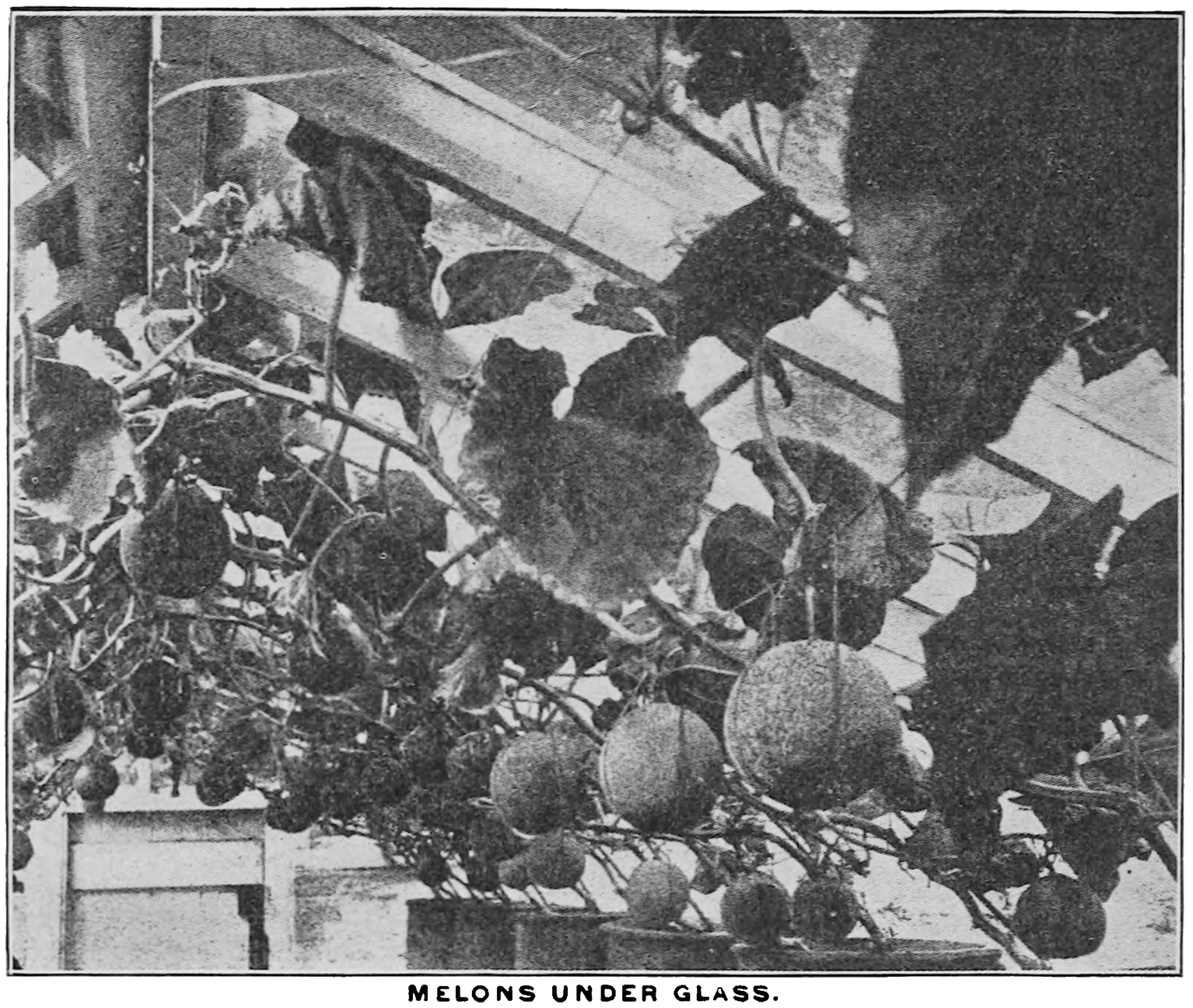
The seed should be sown singly in small pots, and the pots plunged in the hotbed with a temperature of about 75°. This will ensure nice plants that will not be checked by transplanting into the heaps of soil, their permanent positions.

Provision should be made for training the vines up the roof, in much the same manner that grape vines are trained, the plants being allowed to grow until the top of the house is reached, when the points should be pinched out, causing the laterals to break.

The flowers are produced at the axils of the leaves on the laterals, and are of two kinds: pistillate and staminate. The latter, being the pollen-bearing flowers, are produced in much greater quantity, and they may be readily distinguished, as the pistillate flowers have the embryo melon underneath. To obtain a good set of fruit, it is necessary to pollenize five or six on each plant, all at the same time, otherwise the ones taking the lead will develop at the expense of the ones pollenized later. This is best accomplished on a bright day when the pollen is dry.

After the fruit is set, the laterals should be pinched one leaf beyond the fruit, and all sub-laterals and excess of foliage judiciously removed to allow plenty of light to come through.

While growing, melons like plenty of moisture, which should always be warm, both for syringing and watering.



MELONS UNDER GLASS.

Syringe in the morning before the house is opened up, and when the temperature begins to rise; and early in the afternoon, before the sun is off the house, close up and repeat the operation.

A temperature of 65° at night, with a rise of 10° during the daytime, should be maintained, air being given on all possible occasions, care being taken to prevent cold draughts and sudden falls of temperature.

When the fruit begins to ripen, the water must gradually be withheld, so as to create a dryer atmosphere to flavor the fruit.

It is at this time that the red spider becomes so troublesome; but if care and attention in the way of fumigating and syringing have been given during the growing season, it can be kept within bounds.

It will be found necessary to support the fruits to prevent them breaking the vines and falling when they begin to ripen. The accompanying illustration shows a good method of doing so, also of growing them in pots, a desirable way when the bottom heat is furnished by pipes instead of manure.

The time of sowing until the fruit is gathered is about fifteen weeks. Some of the old-fashioned, well-tried sorts are Hero of Lockinge, a white-fleshed variety; Eastnor Castle, green flesh; and Blenheim orange, scarlet flesh.

The general culture is very similar to that practised in forcing cucumbers.

ERNEST HEMMING.

NEW HYBRID MANDARIN ORANGE "ONECO."—Any one interested in Citrus fruits will be interested in a new hybrid mandarin, "Oneco," originating with Messrs. Reasoner Bros., Oneco, Florida. They say it has proved exceptionally hardy with them, the fruit is of good quality, and has but half the quantity of seeds of older choice varieties. Consumers will shortly find it desirable to study the varieties.

BIOGRAPHY AND LITERATURE.

STRENGTH FROM NATURE.

Not undelightful now to pace
The forest's ample rounds ;
And see the spangled branches shine,
And mark the moss of many a hue,
That varies the old trees' brown bark,
Or o'er the gray stone spreads ;
And see the cluster's berries bright
Amid the holly's gay green leaves ;
The ivy round the leafless oak,
That clasps its foliage close.
So virtue, diffident of strength,
Clings to religion's firmer aid ;
So by religion's aid upheld
Endures calamity. SOUTHEY.

Dr. W. A Kellerman, of the University of Ohio, has resumed the publication of the *Journal of Mycology*, which was dropped by the United States Department of Agriculture in 1894. It will be published quarterly at $1.00 per year. Two numbers have already appeared.

EDUCATION IN LANDSCAPE GARDENING.—Another correspondent, from Missouri, writes :

"Please inform me if the study of landscape gardening would be practicable and profitable in this country, and, if so, of whom I could get the requisite knowledge and instruction."

J. J. S.

A few words of advice along this line are found in the July number.

You ask if the study is practicable and profitable in this country. It most assuredly is, if the student proves receptive, and has some artistic instinct, which must be a part of the landscape gardener's make-up.

You can get good preparation by working for a couple of years in a nursery. The Editor considers it one of the best foundations for a knowledge of landscape gardening, as there you become well acquainted with the nature and character of the plants you are to handle. Then seek employment with a good landscape gardener and engineer.

MEEHANS' MONTHLY frequently contains articles on subjects of landscape gardening, and is refreshed by notes and practical hints relating to plants, old and new. You may make in your study and progress good use of its columns if so disposed.

THE KEWITES.*

They love the earth, it is their book, opened by Nature's hand.
Deep in its page, they seek to find the wonders of their land ;
No narrow groove of search is theirs, they claim the whole wide earth,
Though loving best the good old land that gave them light and birth.

The honored toil, the humble spade, far mightier than the pen,
For with its aid, God's marvelous works are shown the world of men.
In that great Book of ancient days, His own command is found,
When the first father of our race went forth to till the ground.

They claim a language all their own, of Old World Latin fame,
And from its mysteries they give each plant, each flower, a name,—
Not meaningless, or of no worth, that soon may pass away,
Yea, rather, that will *live* to teach the world some future day.

In deadly swamp, on arid plain, they brave death and disease,
Beneath the burning noonday sun, beyond the great wide seas.
They ask not praise, nor loud acclaim, content are they to find
The grain of knowledge that brings light to some dark human mind.

Thus do they help to build the world of reason, light, and worth,
And give to it the wealth of lore they've wrested from the earth,
So handing down from age to age, God's happiest gift to man,
That Book of Nature, loved and learnt, since first the world began.

MABEL HEMMMING.

*Students and graduates of the Royal Gardens, Kew, England.

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PSORALEA SUBACAULIS.

NASHVILLE BREADROOT.

NATURAL ORDER, LEGUMINOSÆ.

PSORALEA SUBACAULIS, Torrey & Gray.—Nearly stemless; peduncles, petioles, and calyx white, with spreading hairs; leaves seven-foliate, long-petioled; leaflets obovate oblong, smoothish above, fringed on the margins and midrib beneath; peduncles longer than the leaves, rigid; spikes dense, ovate or oblong; bracts ovate-acuminate; calyx teeth obtuse. Chapman's *Flora of the Southern United States*. See also Torrey & Gray's *Flora of the Northern United States*, and Wood's *Class-book of Botany*.

So far as the author knows this is the first time that any attempt has been made to give a picture of this very pretty, and in many ways interesting, wild flower. It is rarely met with by botanical collectors. We are indebted to Dr. Gattinger, of Nashville, Tenn., for the specimen from which the drawing was made. It is a well-marked *Psoralea*, and the specific name, *subacaulis*—that is, with little stalk, is appropriate, for the little knob between the thickened root and the mass of leaves can scarcely claim to be a stalk at all. Only that there was already a *Psoralea acaulis*, so named by Bieberstein in his "*Flora Taurica*," this might as well have received the stalkless name.

Most of the species of *Psoralea* are natives of North America, or of South Africa, and thus the family was known to the botanists of the Old World before they had much acquaintance with the plants of our continent,—but they were regarded with *Trifolium*, of which our common clovers are well-known members. The great Linnæus was the first to see the distinction. He was struck by the black or scurfy dots that were produced on the leaves, stems, or floral parts, in a more or less degree by all of them,—and from this scurfy character applied the term *Psoralea* to them. Though he points out several good characters by which the genus may be distinguished from *Trifolium*, he places great stress on "*tuberculis punctatum*" as one of them, and refers in a separate observation to this singular character. Linnæus writes the name *Psoralia*, which has been changed to *Psoralea* by modern botanists.

It may be noted here that our plant not having apparently received from the people a common name, that of Nashville Breadroot has been suggested as appropriate from the fact that it has not been found anywhere in our country except in the hills about Nashville. The common eye cannot, however, distinguish the points the botanist can easily detect. Our plant might be readily taken for a Lupine, and then the Buffalo Clover of Texas is *Lupinus subcarnosus*, while another Buffalo Clover is *Trifolium reflexum*. Even good botanists can not at times well distinguish true clovers from *Psoralea*, for after Michaux had named a species *Psoralea melilotoides*, Walter, in his "Flora of Carolina," sent it back to its pre-Linnæan position as *Trifolium psoralioides*. In its somewhat stemless character it is not alone. Nuttall detected one on the plains of the Platte River, which he named *P. hypogæa*—and the great Breadroot of the Indians, *P. esculenta*, also is frequently found apparently perfect in a similar condition. The other characters are, however, definite, and it is not difficult to distinguish the species though in a subacaul state. In the root especially our species differs from *P. esculenta* in being cylindrical, while that species has the root turbinate or top-shaped. In Nuttall's species, *P. hypogæa*, one would suppose from the name adopted the flower-heads after blooming would thrust themselves into the ground to perfect their seeds, as in the case of the ground-nut, *Arachis hypogæa*, and this may be its actual character.

The original specimen of this great botanist is in the herbarium of the Academy of Natural Sciences of Philadelphia, and the flower-stalks curve downward, as if prepared to enter the ground. The earliest of these tuberous species described is *P. esculenta*.

This was collected on the famous expedition of Lewis and Clark across the continent, and their specimens from which Pursh described and named the species are also in the collection of the Academy, and have a tall, branching character. The acaulescent or the stem-bearing character may be regarded as not of considerable importance.

The edible character of the root has made these plants prominent. Lewis and Clark found the Indians partly subsisting on them during the winter, and as their little band had taken but few provisions with them, designing to live as the Indians lived, they had to learn to like the roots too. They tell us in their journal that the Indians collected them in large quantities, and, if for present use, they roast them in hot ashes, when they give a food similar to the yam. If intended for winter use, they are carefully dried, and preserved in a dry place in their huts. When wanted for use they are mashed between two stones, mixed with some water, and baked in cakes over the fire. The explorers found it a wholesome and nourishing food, and agreeable to most constitutions. Pursh notes that the roots had been frequently found before these travelers' times in the canoes of the Indians, but until these specimens were received, no one knew what plant provided them. The branching plant he found to be between one and two feet high. The estimation in which anything is held by the Indian races may be gathered from their religious sacrifices They usually part with what they value most. In peace-offerings to the great Spirit, by the Indians of the San Croix River, the roots of this plant hold a prominent place.

Our species, *P. subacaulis*, is a comparatively recent discovery. Torrey and Gray first described it in their "Flora of North America," issued in 1840, where they say that it was found on "Rocky ground near Nashville, Tennessee, by Dr. Roane," and it does not appear to have been found since in any other locality. Why this should be confined to such a limited area, while the original named species is so widely distributed, is a question of great interest to students of geographical botany. *P. esculenta* is found on the plains east of the Rocky Mountains throughout the whole territory from Canada to Texas, and for a considerable distance west. Under modern speculations regarding the origin of species, the three named in this chapter must have had a common and closely related origin. Whether the early parent has disappeared, or whether these have been derived one from another, cannot be determined, but assuming that the three originated about the same period, it may be asked why one should be so widely distributed and the other so local. One point may be noted, that there is but a single seed in the capsule, and that the capsule does not open to eject the seeds, as happens in so many leguminous plants. Nor does the seed-vessel fall from the calyx, or indeed the flower-stalk separate from the main stem. The whole plant breaks from the root at maturity and has to be carried away by the wind or by the aid of the body of some animal. It is, indeed, what is known on the great plains as a tumbleweed. These agencies could act as distributers on the plains, but would have little power on "the rocky ground around Nashville." It might even be that our *P. subacaulis* may have descended from its more widely distributed relative, and that its isolation during many centuries led to distinctive characters. This latter suggestion has strength from the fact already noted, that so far as the stemless character is concerned, this is at times assumed by *P. esculenta* itself. These and similar questions add materially to the pleasures of the lovers of wild flowers in our day,—and it is seldom that so much of this extra pleasure is afforded as by our present illustration.

As a cultivated plant, the subject of this sketch is very pleasing,—perhaps more so than the illustration would lead one to suppose; but even as it fails to strike out for itself in nature, the cultivator finds difficulty in increasing it. Not only does the fertilization for seed seem insufficient, but the root offers almost no opportunity for multiplication. It is seldom Nature has so few provisions of some kind for maintenance. For the rock garden—and, in fact, for many other purposes—this plant would be a lovely subject. But patience will tell in the end.

EXPLANATION OF THE PLATE.—1. Whole plant contributed by Dr. Gattinger, Nashville. 2. Enlarged flower. 3. Enlarged calyx, showing the greater size of the inferior segment. 4. One lobe of immature seed-vessel, and a seed.

Prepared by THOMAS MEEHAN.

giving it a clean appearance. Yes, and even in winter it has its unique, corky bark to impress upon the observer its right to a claim as a desirable, all-round tree.

Dreshertown, Pa. S. NEWMAN BAXTER.

MOSS ON TREES.—It is generally supposed that moss is mostly found on the north side of trees, and as a general rule this is true. But it has been found by observation that the amount of moss varies and is on different sides of trees. This fact does not materially militate against the general rule that moss is found mainly on the north side.

To intelligently understand why moss is found growing on forest trees we must understand the law that governs it.

No moss will be found growing on trees standing singly and alone in the open.

Three conditions are necessary for the formation of moss; *viz.*, coolness, shade and moisture.

The old rule will hold true where a forest of trees stands on a level. As a general rule trees have both a warm and a cool side. Moss-formation is always on the cool side.

The heart of a tree will always be found (save in some exceptional cases) nearest the cool and mossy side. Hilly land, inclining to all points of the compass, will vary moss-formation accordingly.

Moscow, Vt. TIMOTHY WHEELER.

THE EVERGREEN CHARACTER AND THE COLOR OF THE FLOWERS OF PARKINSONIA ACULEATA.—In your supplementary remarks upon my September note on *Parkinsonia* (page 136), you state that it is an evergreen, and I know that it is always described as being such, but here in Louisiana it is decidedly deciduous, as far as I can understand. Although quite abundant in this neighborhood, it is not indigenous to this State, but is a native of Mexico, probably also of Texas. At any rate, I have been informed it is very common in some parts of that State at the present time. Is it not a fact that many plants that are evergreen in warm climates become deciduous when introduced to colder climates, and *vice versa?* It has one peculiarity that I have never seen recorded: when the flowers at first open, they are yellow, with the exception of a few small brown dots on one of the petals; after a day or two, the petal with the dots turns to a reddish-brown, while the others retain the original color. We know of many flowers that change color after they open, but at the present I can think of no other that has this peculiarity of changing the color of one petal only.

New Orleans, La. GEORGE THOMAS.

[The fact stated by Mr. Thomas, that plants evergreen in warmer climates may become deciduous in cooler localities, is quite true; but that the reverse can be,—*i. e.*, evergreen plants of more northern location becoming deciduous in warmer climates,—is not certain. However, as it affects our *Parkinsonia*, the record of the fact as first stated is important.

To assign a reason for the retaining of leaves in one location and not in another, we might say that in the former case the plant has use for them a longer period—its activity is so lengthened there is no real dormant condition, or at least it is so comparatively short, the leaf functions are still in sufficient force to prevent their drying and falling.

The change of color in certain petals of the flowers is even more interesting, and the more thought is given the whole subject of color, the deeper one gets into the inexplicable mysteries of plant life.

It is easily recognized that the coloring matter in anything is subject to change by chemical process; and the influence of light on cell-contents resulting in changes of color is constantly felt. The brown spots in the early stage of the petal's life probably contain a coloring that when stimulated by some influence enlarges its bulk and spreads from cell to cell till the whole petal be colored alike. The marvelous side of the question is how nature so arranges the brown coloring to occupy only one petal! And this brings us face to face with the mystery of the systematic production and arrangement of parts of plants! How are they ordered so regularly and beautifully?—ED.]

BIRDS AND SEEDS.—Every one knows that birds are instrumental in the diffusion of vegetation. They carry seeds in their beaks, stomachs and excretions. *The Indian Forester* has given evident proof in reporting of a woods planted with *Dalbergia Sissoo*. The ground had been cleared of all other seed-bearing trees, and a natural production of young *Dalbergia* was obtained. Soon it was

found that a lot of young mulberry trees were springing up amongst the *Dalbergia*, being the result of excretions of a bird named *Pastor roseus*, which feeds especially on mulberries. These birds had transplanted thousands of mulberry seeds. The shade of mulberry trees is very dense, and in a short time the suffocation of *Dalbergia* would have been complete. In a few years, by the intervention of these birds, a wood of *Dalbergia* would have been replaced with mulberry trees.

S. MEEHAN LANNING.

From *La Semaine Horticole*, Feb. 1900.

[Apropos of birds carrying seeds, it may also be noted that they are credited with the spread of certain insect pests. The San José Scale is thought to be carried from one tree to another on the feet of birds.—ED.]

THE LATTICE PLANT.—One of the most readable books of travel, one which after thirty years still retains its interest, is the volume on Madagascar, by Rev. W. Ellis. He was an English missionary—who was, besides, an observer. Consequently his book maintains its position as the standard account of that island. This, of course, has reference merely to the natural features of the region; political matters, mainly through French domination, have largely changed in that time.

It is not every one that sees, who can, at the same time, write. Ellis was a close observer and also possessed a good literary style. To him science owes the introduction of various curious plants into Europe. Among these is the Lattice or Lace Plant.

The two most remarkable species of the genus *Ouvirandra* are both from Madagascar. Of these, *O. fenestralis* is the most curious. The leaves grow in radiating clusters and appear as if reduced to nothing but the ribs and veins. In other words, they look like the so-called skeleton-leaves prepared artificially by maceration, or naturally, by exposure to the elements. They are, however, much more beautiful than these.

Reduced as they are to these woody or fibrous strands, the microscope reveals besides other and essential leaf tissue. They are not mere reminiscent survivals like the leaves of Indian-pipe, of broom-rape, or beech-drops. Superficial examination shows simply a stout midrib and several slender parallel nerves connected by exquisite cross-veining. In this view there appears to be no cellular tissue whatever; but after all, such is there, surrounding the nerves and allowing the leaves to function. In the young state, indeed, this tissue nearly fills the spaces; it is only in maturity that it is withdrawn.

The plant has inconspicuous flowers, borne on a stem which arises from between the leaves, and, at top, forks into two spikes. Not only is the plant curious, but we are told that its fleshy, farinaceous roots are valued as articles of food by the natives.

We must not confuse the "Lattice Plant" of the Old World with the "Lace-bark Tree" of the West Indies. The latter is a tall tree with white flowers and is well known and remarkable for its truly lace-like inner bark. In the herbarium of Brown University there are fine specimens of this product.

The story goes that a governor of Jamaica presented Charles II. with several articles of apparel fashioned from this natural lace.

WM. WHITMAN BAILEY.

Brown University, Providence, R. I.

AUTUMN.

The beautiful October days,
  So calm, so grand, to mortal eye,
The breezes whispering in the trees.
And as their downward flight begins,
  The leaves pass gently by.
The little chipmunk gleefully
  Among the stumps doth play.
The squirrel in the hemlock
  Doth hide his nuts away.

Oh dear, what rapture fills the heart,
When viewing nature's beauteous art,
And summer days are on the wane,
And garnered is the precious grain.
The Goldenrod has passed its best,
And Michaelmas Daisy seeks her rest,
The Sumach dons its glorious hue,
The Snowball and the Maple, too.

The stately pines on yonder hills,
A living witness stand of Him
  Who planned and made it all,
  The little brook and waterfall,
Who keeps the rivers in their course,
  The sea within its bounds;
Who paints the lovely landscape tints,
  And brings the seasons round.

G. A. NORTON.

GENERAL GARDENING.

NYMPHS IN A GARDEN.

As breezes from Sabæa o'er the main'
  Waft fragrance on their pinions from the groves
Of myrtle and cassia, and the snowy plain
  Of coffee blossoms, where the Queen of Loves,
  Drawn in her pearly car by purple doves,
Would linger with most fondness on her way;
  A land of passion,—under shady coves
Hollowed in living rock, they spend the day,
To see the houris dance and hear their citherns play. PERCIVAL.

FAILURE OF WHITE BIRCHES.—In your August number is an article by Paul Riis of Thompson, Conn., in regard to the failure of the White Birch. I greatly admire this tree, and around Lenox, Mass., have found it in the most perfect form I have ever seen,—large, handsome trees in great abundance, but they do not seem to thrive well in the part of Connecticut in which my country home is located, namely, the Naugatuck Valley, and I wonder if there is any reason for it; other trees of great variety grow most perfectly there,—in fact, it seems to be a most favored location for all native trees, simply magnificent chestnut, maple, elm, oak, hickory, walnut, butternut, and many others. COURTLANDT BABCOCK.

[Are there any further developments in this line of investigation?—ED.]

WINTER CARE OF WATER-LILIES AND FISH.—Will water in our lily-pond all winter injure the hardy lily plants therein or the goldfish? We have been advised to cover over with boards and straw in freezing weather, but it seems to me cruel to the fish. (MISS) E. T. S.

Claymont, Del.

[It would do no harm to hardy water-lilies to allow them to remain in the water through the winter. That is exactly their condition in their wild state. Of course, you must make sure first that they are of the hardy kinds; also the water should best be of sufficient depth that it may not freeze solid. This especially would likely prove injurious to the fish. If the water is of a good depth, however, not the slightest harm should come to the plants nor to the fish.—ED.]

GUARANTEEING THE LIFE OF NURSERY STOCK.—A doctor who advertises "Cure Guaranteed" is usually considered a "quack," and held under suspicion. A first-class physician will do all he possibly can for his patients; tell under what conditions recovery may be expected; explain circumstances which may necessitate change of medicine; tell of complications which may arise; and will end with directions for the care of the patient. No one doubts his knowledge, his skill is recognized, his wide experience is known, and every one is on the whole satisfied in seeking his advice. The same can be applied to nurserymen; those who have the reputation for carefulness, for having knowledge and experience, and for having their patrons' interests at heart, should have the same confidence that is given to any profession. A guarantee that plants will stand transplanting is an assumption of responsibility for natural difficulties that many plants possess; for misguided, detrimental treatment that might be accorded by the one who plants the stock procured; for unfavorable locations of soil, climate, and exposure; and for unfavorable weather conditions. The custom of guaranteeing from failure brings clear gain to the purchaser,—for but few large plantings result in no loss,—while to the grower it is absolute loss. But some claim on the latter is not without reason, for the best nurserymen may make mistakes; it is simple equity that should be required. A responsible nurseryman need not guarantee more than delivery in good condition, but he will, upon presentation of all the facts in the case, bear some portion of the loss.

J. F.

ITALIAN ROSE GARDEN AT YADDO.—The accompanying illustration is a partial view of the Italian rose garden at Yaddo, the home of Spencer Trask, Esq., Saratoga Springs,

N. Y. Many thousands of visitors who attend the races are perhaps unconscious of this beautiful home adjoining the race-track, with its five miles of well-kept drives, which the owner so kindly throws open to the public.

The illustration conveys but a faint idea of the extensiveness of the place, with its terraces, avenues and statuary, alpine gardens and lily-ponds, all kept in first-class order, and in charge of Mr. C. A. Adolphson, the gardener.

Here are seen Italian gardens and individual taste blending with New England scenery, making a very pleasing whole. No expense seems to have been spared, yet the place is essentially a home, and well worth a visit from any one interested in gardening.

E. HEMMING.

SATISFACTORY HOUSE PLANTS.—No plant is more satisfactory for house culture than the yellow Oxalis; it will grow and blossom so freely if given sunshine and water.

Begonias seem to thrive even on neglect, and give all the variety of foliage needed. The Chinese Primrose is a continuous bloomer. The feathery *Asparagus plumosa* must not be forgotten; and if a vine is needed try a *Cobæa scandens*.

Visiting a florist a few days before Christmas, nothing more delighted my eyes than the bright fruit of the ornamental pepper; the tree-like plants were so clean and thrifty, and the bright, shiny fruit made a very attractive plant for decoration. But I was informed at once that every plant was sold, and came away quite disappointed. The Jerusalem Cherry has always been a favorite, but these gay little peppers excel even that.

Rochester, N. Y. SARAH B. BOWERMAN.

PLANTING FRUIT-TREES FOR DECORATIVE EFFECT.—Since reading the MONTHLY, and also the articles of Mr. Joseph Meehan in the *Exchange*, I thought I would like to have your opinion of the advisability or desirability of planting fruit-trees for decorative effect on large lawns or in small parks. To my mind, I cannot see why a group of fruit-trees of various sorts on a large lawn, or specimen fruit-trees, can be out of place, as they certainly look charming when in full bloom and are more interesting to many when they are loaded with ripe fruit. I am aware it is not fashionable, neither would I advocate fruit-trees for groups or specimens on large places to the exclusion of deciduous or evergreen trees, but if mingled tastefully with them the effect would be a relief from the fashionable formality of mere shade-trees. Neither do I think they would look at all unsightly in smaller gardens, where there are no facilities for large or small orchards. The various foliage of deciduous and evergreen trees are certainly beautiful, but to grow nothing but leaves when fruit can be had is not always wise.

Another thing I would like to mention, and get your opinion upon, is in relation to pines. How often do you see miserable specimens of the pine on a lawn? I often wonder at the cause. My idea is that too often too large plants are planted in order to give immediate effect, and I am also very much inclined to think that pines love company, as they seem to thrive much better in groups than as specimens, and I have repeatedly observed in Canada, where the large giants of pines have been cleared, and have left here and there one, the latter have dwindled away and died and none have come to take their places, even where the underbrush has not been disturbed. Why is it so? I may be wrong, but I feel much impressed that they pine for company. In many parts of England on large estates, they plant the pine, not in ones, twos, threes, or dozens, but in hundreds and thousands, and they flourish and enjoy life, and company, too, and how grand they look, with their various foliage, among the hills and valleys! I often think how beautiful they would look among the hills and valleys in this part of the country.

In your MONTHLY you have several times referred to "State Flowers." I do not know if every State has a State flower, neither do I know the particular flowers for the several States. I should like to know, but the thought struck me while reading your remarks, could not our public parks superintendents, where practicable, make a bed the shape of the State and plant it with the State flower, or edge it with a large margin of the State flower? I fancy it would be interesting to the public. Or if money is in abundance, even a miniature bed or park the shape of the United States, with the larger rivers and lakes for ornamental waters and lily ponds.

Devon, Pa. GEORGE MCNAUGHTON.

[There can be no serious objection to planting fruit-trees for ornamental purposes. If the trees to be planted are pleasing to the eye, as much so as a rose, the hips of which could be made into marmalade. As remarked, many fruit-trees are charming in full bloom and in

THE TAMARISK.

and can be arranged in the landscape harmoniously with the general planting scheme, the fruit becomes a secondary consideration—just fruit,—instance the apple and peach in bloom, and the Red Siberian Crab in fruit. If the fallen immature or ungathered fruit be per-

mitt d to litter the lawn and decay there, a nuisance is created. Properly carried out, our correspondent's plea is worthy of consideration.

The bedding of State flowers is an excellent thought for adoption by those interested in that style of gardening.—ED.]

THE TAMARISK.—Passing along a street recently, the writer was impressed by a specimen of the Tamarisk that had been grown in tree form. As a rule it is seen amongst shrubs kept more or less bushy, where its feathery foliage effects a marked contrast. While of great value for the last-named purpose, the illustration on page 173 gives evidence of another form quite as valuable and interesting. The Tamarisk is not well known except by those who use large quantities of shrubs for massing in borders, and by those along the seacoast, where it makes a satisfactory hedge. It has the general appearance of a fine evergreen, and if carefully grown as a specimen plant it will prove quite effective and satisfactory. Sharp pruning does not harm it, while the pruning principle oftentimes expressed, prune a little and often, will keep up a good supply of fresh young growth. Allowed to grow at will, the growth is inclined to be straggling.

WINTER EFFECTS ON SOME PLANTS.—Some years ago I left out all winter some two-year seedlings of *Yucca aloifolia* to test the species for hardiness. All were killed, but one sprouted feebly from below ground. Thinking the plants were too young for a fair test, three sturdy, good-sized plants were put to trial last year, having been planted in spring that they might get good root-hold. The fate of the others overtook them. They are dead. I therefore assume that *Yucca aloifolia* is not hardy as far north as Philadelphia. Some six years or more ago, a dozen pomegranates were set out in an unprotected border and left out all winter. They were killed to the ground, but sprouted vigorously from the base when spring came. Every year since it has been the same way, the tops killed, but a good bottom growth following. The winter just past has proved an exception. But an inch or two of the tops are hurt, and, as the growth of last year's shoots was two feet, there is nearly that length of budding-shoots. I have hopes that now that there are live, hard-wood shoots, shrubs will result, as occurs with the Crepe Myrtle when it gets through a winter safely.

Ligustrum Japonicum, a pretty-foliaged, true evergreen privet, which in severe winters will suffer a little at the extremity of its shoots, has passed this one unscathed. When in sheltered places, such as near a dwelling, the severest cold has never hurt it. It makes a handsome single specimen and a good hedge.

In the case of protecting trees in winter, the covering is often more of an injury than a benefit. The writer saw some *Magnolia grandiflora* being tightly bound up in straw in early winter, and felt sure it was an unwise proceeding. The coming of spring proved it. They were killed to the ground. Had the plants been entirely uncovered, only the leaves would have been hurt. All this Magnolia needs is shade from the sun, produced by placing evergreen branches on the south side of it, and if free from high winds, so much the better. If the wood is well ripened, it will come through in good order.

The Pinehurst Nurseries kindly gave me a small specimen of *Abies Arizonica* last autumn for testing purposes. It was planted and heavily mulched. Hard freezing weather set in on it at once, but it stood it without the least damage, and is now pushing out its fresh growth. This is known as the Silver Cork Fir, a name well characterizing its bark.

In places sheltered from high winds in winter, the pretty evergreen, *Elæagnus Simoni*, is quite hardy, and it is fairly hardy in any position. This is the species which produces its sweetly perfumed white flowers in the very last days of autumn,—in fact, a few frosts have occurred at times before they open.

JOSEPH MEEHAN.

CURVED AND STRAIGHT LINES IN LANDSCAPE GARDENING.—Landscape gardening, to be pleasing, must be accommodating. Nature herself is so. In the plains she will give the oak, the beech, the birch, a giant height and strength; on the hillsides and elevations she checks their luxuriance, while on the mountain summits she reduces them to the rank of mere bushes. They, therefore, who follow the "natural style" may learn from this that its results depend on their *application* of natural laws, rather than on any abstract formulas of *lines* or *circles*. Mankind generally run into

round the circumference of a circle on a matter of business, instead of driving straight through its diameter, unless there can be beauty in an inconvenience. Nor is it in reason that avenues should be denounced in all circumstances, or all occasions. They are often abominable, but sometimes grand. What could supply the want of the short, wide avenue that leads from Walnut Street, Philadelphia, through the square to the venerable old Hall of Independence? Or who would object to the magnificent avenues of live oaks, a hundred years old, that adorn many of the fine plantations in Carolina?

It follows, then, that a curved line is not pleasing merely because it is a curved line; nor is a straight line to be objected to merely because of its straightness; either case will depend upon its being in character with its aim and purpose. It is the *expression* that governs the beautiful, and whatever is beautiful must be founded in nature. The landscape gardener has but to give a meaning, has but to stamp an expression of beauty upon his works; then, no matter whether his principles of design be circles, curves, or straightness—whether his materials be foreign or indigenous, exotic or native, American or English—his works will please.

THOMAS MEEHAN,

In the *Horticulturist*, February, 1852.

NEW OR RARE PLANTS.

THE KUDZU VINE, DOLICHOS JAPONICUS.—Among vines which have attracted much attention within a year or two past is the *Pueraria Thunbergiana*, better known as *Dolichos Japonicus*, and which is also called Kudzu Vine. Though it has been in collections in this country since 1876, having been brought here by the Japanese during the Centennial Exposition at Philadelphia,—and it may have been in some collections earlier than that,—it has but recently received the recognition it deserves; which is another example of what nurserymen so often meet, that it takes years for a really good plant to become popular.

Though by no means the only one it has, its chief merit is its extraordinary growth a year. Shoots fifty feet long are not at all uncommon, and strong vines make even greater lengths than this.

The vine illustrated on page 175 is growing in the Meehan Nurseries, at Germantown, attached to a huge cedar pole, and there are shoots to it trailing on the ground over fifty feet in length, all of this season's growth.

There seems some misapprehension in the minds of some writers in regard to the flowers of this vine. Some years ago a writer in a horticultural magazine described the flowers as almost inconspicuous; and the Cyclopedia of American Horticulture says of them, "not showy." The flowers are pea-shaped, rose-colored, in axillary spikes six inches or more in length, and are beautiful, in the writer's opinion, and they have a very pleasant odor.

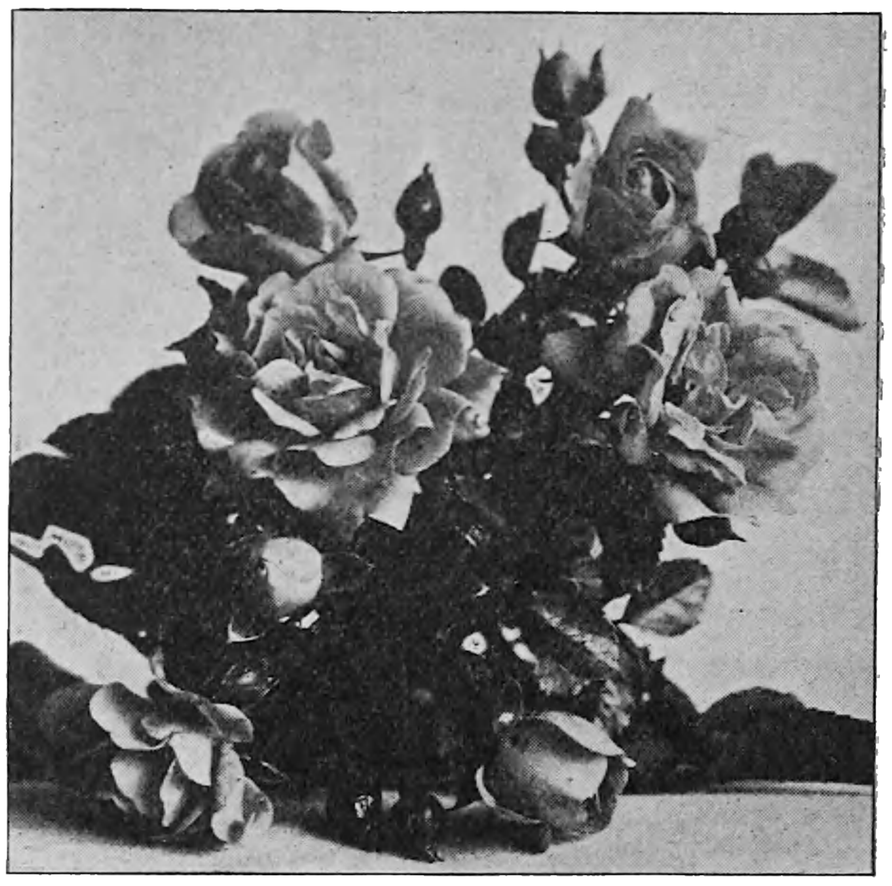
For covering a large space quickly—be it an upright or a trailing one—there is no vine its equal.

Young plants die back to the ground in winter, but strong ones, such as the one illustrated, do not entirely, only the younger growth; but how far its tops die back depends somewhat on the severity of the winter.

In its native country a starch used as food by the Chinese and Japanese is obtained from its roots, and a fibre of much value from its wood. The roots are large and fleshy, and on old vines are reputed to be of enormous length and of curious shape. J. M.

THE HARDY FLOWER GARDEN.

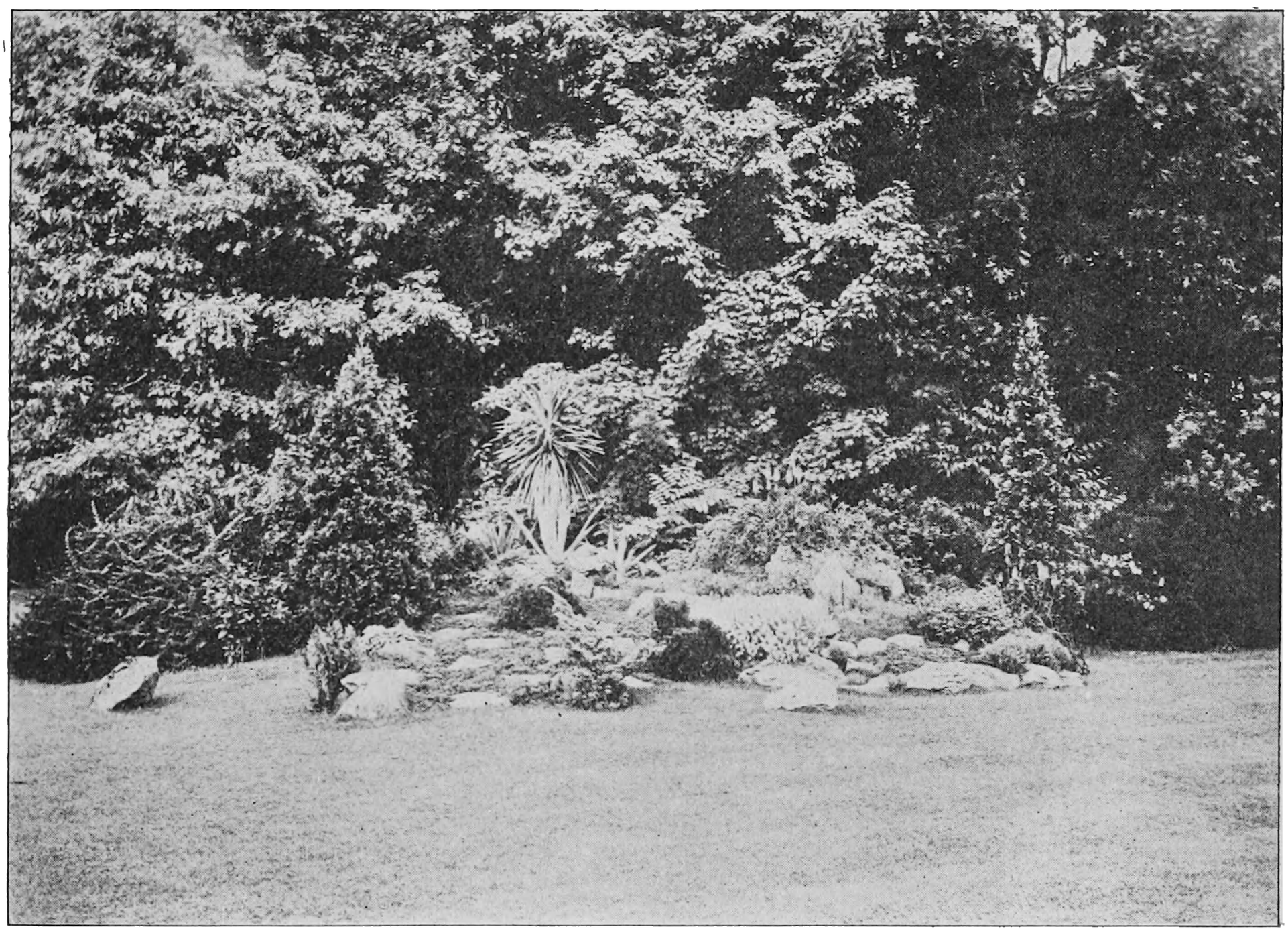
NEW ROSE DOROTHY PERKINS.—Some time ago MEEHANS' MONTHLY took occasion to issue a caution against the prolific introduction of



NEW DOROTHY PERKINS ROSE.
A HYBRID WICHURAIANA.

new hybrid Wichuraiana Roses,—the variations and nature of the "improvements" did not merit the effort. For the creation of the Dorothy Perkins Rose, there is probably a good excuse, judging from the many praiseworthy things said about it.

Dorothy Perkins is a child of *Rosa Wichuraiana* and rose Mme. Gabriel Luizet. In habit, it closely resembles the popular Crimson Rambler, growing erect and flowering young. The foliage is considered better than the latter favorite, partaking of the Wichuraiana blood. The flowers are comparatively small, but produced in large clusters, making a beautiful display ; their color is a shell pink. The plant is said to be excellent for forcing purposes. By courtesy of the originators, Jackson & Perkins Co., Newark, N. Y., we are able to present the accompanying illustration of a few flowers.



A MODEST BUT EFFECTIVE ROCKERY.

A PRETTY LITTLE ROCKERY.—I send you a photograph of my rockery. You can readily see that it is not a rockery as planted in European countries, where Alpine plants will succeed. At the left, planted on the level, is *Berberis Thunbergi;* back of it, still on the level, is *Funkia subcordata*. To the right of the barberry, on the level, is a Douglas's Pyramidal Arbor-vitæ. All of these are planted in nearly a half-circle, back of which, on a raised bed, held in place by rocks, are the Ostrich Ferns. At the base of the rock, in front of the Arbor-vitæ, is a fern ; to the right, at the margin of the grass, is the Japanese Golden Juniper. Two dwarf arbor-vitæs, with one pyramidal one at the extreme right, complete the list of evergreens.

Surrounding the flat stepping-stones that are on rising ground, is *Veronica circæoides*, with *Phlox subulata* at the top level. Then at the middle-back is a planting of plants of a succulent nature—Agaves, Sedums, Sempervivums, etc., and back of them a *Dracæna indivisa*. The third bed at the right contains eleven fair-sized pockets. The highest contains Tritomas, around which are *Callirhoe involucrata*, which droop over. I use *Phlox reptans*, *Saponaria*, *Campanula cæspitosa*, *Alyssum Saxatile*, *Geranium sanguineum var. alba*,

Asclepias tuberosa, *Adonis vernalis*, *Gypsophila reptans*, *Phlox subulata*, *Ajuga Genevensis*, etc. Back of the last bed is a *Dimorphanthus*.

Highland Park, Ills. W. C. EGAN.

[Mr. Egan furnished the foregoing notes as a foundation for an article to accompany the photo. But the photograph reveals one of those occasional scenes that speak for themselves, and the details, or the component parts, seem all that are required. These are well covered, briefly, in the notes. Attention should be drawn particularly to the good general effect produced with the background of trees. It is the natural rockery effect one should usually strive to make. Another lesson to be drawn from the scene is that comparatively little space is required for the making of a pretty little nook.—ED.]

ASTILBE RIVULARIS.—Mr. Wm. Woods, Lenox, Mass., sends the following interesting note about a herbaceous plant not very common in cultivation :

"I have just measured a flower shoot of that very fine plant, *Astilbe rivularis*, and it measures eight feet four inches from the ground to the top of the panicle. There are seven flowers that I can see on it now, and the shortest stalk is over seven feet high."

SUPERIORITY OF PERENNIALS.—It is remarkable to note the expense and time some people are willing to spend, each year, in raising annuals, when, for less time, and in the end less money, they could have a permanent bed of perennials.

There are many fine, showy perennials, such as Pæonies, Iris, hollyhocks, Helianthus, Phlox, Anemones, and a thousand or more other kinds, that give as much color and beauty to the garden as the annuals.

Perennials, after being once transplanted, simply need occasional cultivating, and at the close of the season a good mulch of manure. The annuals, after being planted from seed, in a great many cases require transplanting. During this course a great many are lost ; and there is constant care needed the rest of the season in cultivating.

Annuals do very well for some small gardens, but for persons who love flowers and have plenty of ground, the perennials are the most satisfactory investment. W. J. C.

FRUITS AND VEGETABLES.

A HARDY SWEET ORANGE.—The press has recently been exploiting some experiments being made by the United States Department of Agriculture in the production of a hardy sweet orange of Japanese origin. MEEHANS' MONTHLY briefly recorded the inauguration of these experiments some time ago. The orange "of Japanese origin" is simply *Citrus trifoliata*, commonly known as the Hardy Orange—a beautiful flowering shrub or small tree in the North, a good defensive hedge plant, and frequently a stock in the South for sweet oranges. The effort is to cross this hardy orange with the ordinary sweet ones, hoping to secure a race that will combine the desirable qualities of both. Mr. H. J. Webber, in charge of the Laboratory of Plant Breeding of the United States Department of Agriculture, states that, while some encouraging results have been obtained so far as hardiness is concerned, the experiments have not been carried far enough to produce anything of commercial value, nor to justify any positive statement in regard to the outcome, as, owing to the slow-growing nature of the orange, time is necessarily required to determine the results.

GLORIA MUNDI APPLE.—The Gloria Mundi apple is held in but poor esteem, and is now not generally propagated by nurserymen.

BEN DAVIS APPLE.—The origin of many popular apples is obscure. One of the most famous, Ben Davis, is believed to have originated in Virginia, though strong efforts have been made to have Kentucky credited with its birthplace. It is not of the highest class in eating qualities, but as a market fruit, and, as one might say, as a good all-round variety, it has few superiors.

TEMPERATURE FOR STORED APPLES.—The proper temperature for keeping apples is as nearly thirty-five degrees Fahrenheit as it is possible to keep it.—*Denver Field and Farm.*

BANANAS BY THE POUND.—The California *Fruit Grower* reports that bananas are being sold in the Chicago market on the same basis as potatoes or beans, by the pound.

home, she asked permission of her lover to return for the purpose of bearing away some memento of it. So, retracing her footsteps, she broke a sprig from the white rose which climbed up the poles of her father's tent, and, preserving it during her flight through the wilderness, planted it by the door of her new home in the land of the Seminoles. And from that day this beautiful flower has always been known between the capes of Florida and throughout the Southern States by the name of the Cherokee Rose.' "—*Horticulturist.*

BOTANICAL NAMES AND POETIC LICENSE.—The pretty and suggestive poem, "Modernity," by Mrs. Potter, in the October MONTHLY, has been laid open to criticism by the transposed botanical name *Phegopteris hexagonoptera* occurring in the third verse. To use the own words of one botanist, it is like placing the cart before the horse to write *Hexagonoptera Phegopteris.*

Poets are always privileged to deviate a little from the straight path; but other than by such license the present use of the words seems correct, though possibly confusing to any one endeavoring to make botanical use of the name as written. The specific names of plants can be considered as adjectives to show what member of the genus is spoken of. In our case, it is the *Hexagonoptera Phegopteris*, and not the *Dryopteris Phegopteris*,—or in common parlance, it is the Hexagon Beech Fern.

GENERAL NOTES.

FLORAL DISPLAYS IN HOUSE WINDOWS.—If the residents of streets where the dwellings are near the sidewalk could be made to realize the possibilities in window displays of beautiful flowers, the frequent monotony of brick and mortar would be greatly relieved and an interest awakened in behalf of more frequent use of flowers.

The writer has in mind two windows, on quite a small street, that never fail to attract his attention pleasingly. The sashes are fitted with large panes of clear glass, and behind them are invariably handsome flowers (not necessarily expensive ones), arranged with good taste. At this time of writing there are vases of fine large Chrysanthemums. This same little street has two other sets of windows equally admirable, and with such incentive the culture of flowers is pretty sure to spread.

CHANGING OF PLANTS.—The *Salinum tentifolium*, in its native haunts, throws up its flowering peduncle from a close-growing tuft of tinted leaves, averaging twelve inches in length. Here, in my garden, it has a stem with its leaves separate, as far apart as an inch, but generally half an inch, more or less, apart, irregularly set, with a stem five inches high before the peduncle starts, and without root-leaves. In its wild state all the leaves are root-leaves. This is quite a change, although I have noticed that in its wild state it throws up branches which have leaves as well as the terminal peduncle. It is interesting watching the behavior of flowers.

F. K. STEELE.

WEEDS AND INSECTS.—Much trouble may be avoided by dealing with weeds and injurious insects on their first appearance. If allowed to have several years start of efforts to control them, it becomes great labor; and some are easily controlled. The drop-worm, that carries its case made up of pieces of the leaves and branches of the tree it feeds on, is very destructive if left alone, but easily checked if hand-gathered in time. In all carefully managed gardens, a boy is set to work once or twice a year to collect and destroy the bugs. One should not only do this on his own grouds, but his neighbors, who may not have the advantage of reading MEEHANS' MONTHLY, or similar journals, should be told of their danger in letting the drop-worm have a free foraging ground.

PORTO RICAN AGRICULTURAL POSSIBILITIES.—It is stated that the sugar and coffee crops of the island of Porto Rico are capable of wonderful development. Interest is being widely created among New York capitalists.

FRUITS AND NUTS IMPORTED.—The amount of fruits and nuts consumed is enormous. The United States raises great quantities and exports considerable of certain things; but it is said that besides she imported to the value of $5,139,008 during eight months in 1901.

says the herbarium was, in 1840, still in the possession of the Fraser family. He seems to have been held in high esteem by his colleagues. Dr. Baldwin, in a letter to Dr. Muhlenberg, November 11, 1814, remarks: "I learn that two of your Southern botanists have been at Salem on a botanical visit,—Dr. McBride, a near neighbor of the excellent Walter, and Mr. Le Conte,—looking for mountain plants. By information from Elliott I know that Walter has not only described the Carolina plants near his place, but also mountain plants collected by Fraser, and left them with Walter for description. Both Dr. McBride and Dr. Le Conte could add much to our information if you could persuade them to communicate illustrations to 'Walter's Flora.'" In a letter to the author, written in the early sixties, the famous botanist, Dr. Francis Peyre Porcher, states that his grandmother was one of Walter's daughters,—and his son, Dr. Walter Porcher, is still ranked among the sons of science by his fellow-citizens of Charleston.

The derivation of the name *Smilax* is obscure. One of the species we now know as *Smilax aspera* is the original *Smilax* of Dioscorides. The stems of this species are covered with small spines, and on this account are very rough, and hence the Greek word *Smile*, which is equivalent to our nutmeg-grater, and is generally regarded as the suggestion for the original name. All the species are more or less spiny or aided by thorns in climbing. In many cases the stipules become thorns, or are developed to tendrils as in the case of *Smilax Walteri* here described.

Smilax is famous in pharmacy, *S. aspera* seeming to be the chief species yielding the root known as *Sarsaparilla*. It seems to have been our native species that first gave the impulse to its great reputation. Indeed, it is by no means clear that it was not our plant that was referred to so enthusiastically by early writers. Gerarde, in 1636, says in his "Herbal": "The kind which we usually call *Zarza* or *Sarsaparilla*, wherewith divers griefes and maladies are cured, and that these roots are very well known to all; yet such hath beene the carelesnesse and small providence of such as have travelled into the Indies that hithertoo not any have given us instruction sufficent, either concerning the leaves, flowers, or fruit: onely Monardus saith that it hath long roots deepe thrust into the ground: which is as much as if a great learned man should tell the simple that our common carrion crow were of a blacke colour. For who is so blind as seeth the root it selfe, but can easily affirme the root to be very long? * * * Some report that it is a kinde of Bindweed. Others, as one Mr. White, an excellent painter, who carried very many people into Virginia, there to inhabit, at which time he did see thereof great plenty as he himselfe reported unto me, with this bare description; it is (saith he) the root of a small shrubby tree, or hedge tree, such as are those of our country called Hawthorns, having leaves resembling those of Ivy, but the flowers or fruit he remembreth not. It is most certaine that *Sarsaparilla* is the root of the Americane *Smilax aspera*, both by consent of most writers, and by the relation of such as have seen it growing there." As the only other red-berried species of that country, *Smilax lanceolata*, does not fit the description, it leaves our plant in possession of the name. It is, however, understood that the sarsaparilla of our time is derived from several species, of which *Smilax China* is said to be one of the most popular.

In describing our plant the earlier botanists laid great stress on the fact that the berries were not perfectly round, as in other species, but were attenuated or drawn out to a point at the apex. In our drawing they may be noted as perfectly round,—and in the large herbarium of the Academy of Natural Sciences of Philadelphia it is found to be not uncommon in this condition, especially in the more northern portion of its territory. It has not been found north of New Jersey.

Many botanists class *Smilax* with the great lily family,—but this genus and some allies like *Trillium* and *Dioscorea* assume a partially woody character, with the netted-veined leaves of an exogen. Chiefly on these grounds, they are arranged in a distinct class as intermediates and termed *Dictyogens;* in which *Smilax* finds a prominent place. In the structure of the flowers, fruit, and in the general organization the characters are closely related to the lilies.

EXPLANATION OF THE PLATE.—1. Spring branch, furnished by Mr. Wm. F. Bassett, Hammonton, New Jersey. 2. Autumn branch, from the same. 3. Cross-section of berry, showing the three-seeded capsule common to *Liliaceæ*.

Prepared by THOMAS MEEHAN.

WILD FLOWERS AND NATURE.

A SUNSET SCENE.

The perfect sense of beauty,—how the heart,
Even in this low estate, with transport swells,
When nature's charms at once upon us start!
The ocean's waste where grandeur dwells,
The cloud-girt mountain, whose bald summit
tells,
Beneath a pure black sky the faintest star,
The flowery maze of woods, the hills and dells,
The bubbling brook, the cascade bounding far,
Robed in a mellow mist, as evening mounts
her car.

PERCIVAL.

——

CLEMATIS REMINISCENCES.—It was during a visit to England, where, soon after my arrival at that Mecca of Floriculture, I found much that was interesting and enjoyable, among those who love and cherish "Flora's" fragrant shrines, so frequently met with there. And while pleasantly mingling among her zealous votaries, who so happily dwell in her Edenic domain, many instructive object lessons I learned and would much like to copy on this side of the sea. But as that does not now seem likely to occur, I will however venture to mention a few things which may possibly interest those whose tastes are somewhat like my own.

Among the many vigorous and elegant climbing plants to be seen there in all their glory, from "the ivy green," which clings so tenaciously to castle and cottage walls, to the bonny sweet-scented rose, and jasmine-covered dwellings which so picturesquely embower thousands of homes both in country and town, the splendid Clematis of the Jackman type, in all its varied grandeur, seemed to be much in vogue among the flower-loving folk everywhere.

And yet with all the striking charms of this lovely-featured family, which really seems to fascinate its admirers, a new claimant for public favor—of the same kin—has undoubtedly become popular there, from the various uses to which it is being put.

Clematis montana is its modest name; and its native home is in the lofty mountain ranges of Nepal, and from whence it found its way into Europe some sixty years ago; where, apparently, it must have been lost sight of, until recently rediscovered there.

Its general characteristics are not, in many respects, unlike its sweet-scented sister from Japan, *C. paniculata*. And while admitting this, there is nevertheless this distinctive difference between them, namely, that while the former is by far the most rapid climber and greatest rambler of all its pretty compeers, and when gentle spring dons her robes of comely green, it is the first one to cluster round your chamber windows and shyly greet you, while "Aurora tips the hills with gold and opes the gates of day."

Thus it is, that, while *C montana* is "early up and at it," the other beauty does not leave her earthy bed until later on, and, *possibly*, that may be one reason why it is the last one of its kind to unfold its stellate charms when summer's flowers are in the wane

Of this admirable leafy rambler, let me add that it is well adapted to closely drape bare, unsightly walls or any other unattractive objects, besides being useful as a dense screen, or as a live covering to fences, garden arbors, trellises, trunks of old trees, etc. And nothing that I am aware of in the nature of a vine could possibly be more picturesque or befitting than when gracefully entwining or overhanging a rustic, cosey seat, grotto, or summer-house, which offer both rest and retirement when one is weary with the depressing cares of life and its incessant turmoil.

Well do I remember while quietly meandering about a pretty rural hamlet in the early morning, admiring the gardenesque beauty of this secluded and tranquil spot, how deeply was I interested while inhaling the pleasant odor of the opening flowers, and listening to "the wood-notes. sweet and wild" of the musical blackbird and thrush. And then, as if to vary the charm of these renowned soloists,

while singing on the top of a tree, and while there briefly resting, when the soft, pathetic, and languorous song of the dapper little robin redbreast broke the stillness of the hour, at short intervals, so delightfully enlivened with the rich melodies of the gay and cheery bullfinches and linnets, which echoed so delightfully around. Quietly I enjoyed the exquisite sylvan carols and songs which the feathered minstrels were so deliciously pouring out to "old Sol," whose ruddy and beaming countenance smiled so complacently at them as he ushered in the new-born day.

As I reluctantly turned to leave the enchanting scene, the sight of a beautiful waterfall some three hundred yards or so from where I was standing, drew my attention towards it. And as it seemed to flow so silently, and then disappear over a low garden wall in such an unexpected place, it greatly surprised me.

Well, imagine if you can my still greater surprise, when on a closer approach to it I perceived the object I was gazing at was not what it at first seemed to be. Surely no one was more completely nonplussed with the sight of the exact resemblance or imitation of a perfect waterfall, than the mystified scribe who thus relates his experience when rusticating among the bosky hills and dales of Derbyshire!

The patient readers may probably feel as much amused as the writer was momentarily amazed when he dicovered the pseudo-cascade so deceptive in the distance was nothing more than a vegetative one, formed from a vigorous plant of *C. montana*. Yes, there it was in all its flowery sheen, translucently glistening while wet with the heavy night dew, and over which the solar rays were shining.

The structural part over which it was climbing was simply a young larch tree, some twenty feet high, cut from an adjacent plantation. And on its reaching the top and finding nothing more to cling to, naturally began to depend—or hang downwards—just as water would descend while falling from a higher plane.

In conclusion, I will briefly remark that it there really are such things as national tastes or idiosyncrasies which serve to characterize a people, why then the ardent love of flowers which the English everywhere show for them—then, unmistakably, they may properly be so designated for their admiration for every blooming thing of beauty which blossoms there. And as the ornate Clematis in all its variety seems to be under cultivation wherever a place can be found to plant one, I shall make no mistake if I say it is indeed ubiquitous in Albion's verdant isle.

Mount Holly, N. J. WILLIAM T. HARDING.

BOTANIZING ON CITY VACANT LOTS.—Citizens with a love for wild flowers, but whom circumstances prevent from getting to the country as often as they would like in order to indulge their taste, will often find the vacant lots about town worth investigating. To be sure, many of the flowers one finds there are rather weedy looking individuals, but there is no plant, however humble, that is not worthy of study, and even weeds often have stories to tell that we should be glad to hear.

A peculiarity of this urban flora is that it is largely of foreign origin. Your average native-born American plant, like the redman, finds city life too circumscribed for it, and leaves when bricks and mortar come. The foreign plant immigrant, however, is apt to be less fastidious, and will often live and spread even amid ashes and rubbish. Now these flowers from over the sea frequently have interesting historical associations, and much pleasure and profit are in store for any industrious student who cares to look up their literature. Among the books useful in this sort of study may be mentioned DeCandolle's "Origin of Cultivated Plants," Pickering's "Plant Chronology," Thiselton-Dyer's "Folk-Lore Plants," Prior's "Popular Names of British Plants," and the Century Dictionary, to which list the Editor of MEEHANS' MONTHLY can doubtless add others.

A few such plants, which have awakened the interest of the present writer in his city rambles, are the Millet (*Panicum miliaceum*), which is believed to be the grain mentioned in the Bible under that name, as in use by the ancient Hebrews of the prophet Ezekiel's day; the Hemp (*Cannabis sativa*), which has recently been brought prominently to the public attention in James Lane Allen's novel, "The Reign of Law," and which has a history full of romantic interest; the Lesser Celandine (*Ranunculus Ficaria*), sung by the poet Wordsworth; Lucern or Spanish Trefoil (*Medicago*

suburb, one on looking at the picture might imagine himself far away in the country.

It is little things like this which put an object into what might be a meaningless outing, and which repay with a pleasure beyond value every effort used to seek and to know.

Germantown — EDWIN C. JELLETT.

[It may be noted that the picture presents a piece of perfectly wild scenery. The properties on either side of the lane belonged, years ago, to different parties, and post and rail fences were on the lines now marked by the trees. When the properties were purchased, the fences were removed, and the little trees, which nature had sown under the protection of the fences, were allowed to remain, and grew up in whatever form suited them best.]

FLORAL ASSOCIATIONS.—Possibly no associations are so strong as those connected with flowers. One may find a piece of rock chipped from some celebrated stone, carefully wrapped in a drawer where it may have lain numberless years. We glance at it and it is thrown aside without a thought. But if we find a sprig pressed between the pages of some old volume, a whole poem springs to the mind at once. The following extract from a letter from a California lady, though not intended for publication, is worth reading, and will find a response in many a breast:—

"I still correspond with a friend in Vermont, whose last letter was written the next day after she was 88. Years ago, in our garden, I picked a sprig of pink yarrow when she was with me and she cried out, 'Oh, yarrow! give me a sprig, it was the friend of my childhood.' She then explained how, when a child, she had the satisfaction of picking yarrow that grew by the wayside, while garden blooms were denied, as her father was an invalid, and she the youngest of twelve children, and lived from place to place. Later, she supported herself and mother with her needle, etc. An original and lovable soul is she. I also recall a wayside flower given me years ago—the first I had ever seen of the kind. The humblest flower has its own charm—even a little green sprig worn in the hair of an evening, is refreshing when recalled by memory. I still have flowers pressed when in Bluffdale, Ill., the home of a Russell, my mother's brother, a descendant of the famous line of which the Dukes of Bedford are representatives."

THE COMPLAINT OF THE FLOWER.—Once upon a time, many years ago, a flower was heard complaining bitterly to the plant on which it grew that its life was so short that its beauty lasted for such a little time. For it said, "I help to make you beautiful and admired by all who see me, and the other flowers envy my beauty, and all the insects worship and love me,—even man dug up your roots and planted them in his garden so as to have you near him—so as to be able to see my beauty and enjoy my perfume with greater ease and pleasure to himself; yet my beauty soon passed away, and I perished." 'Twas a very sad tale that the flower told. So the plant tried to comfort the flower. It told the flower that "You were created to beautify and embellish the hills and valleys, and to be a comfort and a pleasure to man and to all who looked upon your beauty. To attract the insects with your showy colors and furnish them with food in your sweetness, and, whilst these insects were searching amongst the petals of your bloom for the nectar, they helped to reproduce me forever, and without their help I would die, and my species would become extinct. You will come every year and many times throughout the year, and make me attractive who otherwise has no attraction. and I cannot live without you, and you cannot have an existence without me." Then the flower nodded as if it understood, and presently a bee brushed its wings rudely against it and it tipped over and fell to the earth, when the hot sun soon curled it up and it fell away into dust. F. K. STEELE.

INSECTS AND FLOWERS.—"No end to wonders unfolding to searchers after beauty and truth. Will there not be other worlds to conquer when the North Pole has been reached?" The true child of science pursues the path of knowledge without the slightest thought of the use the new discoveries may be put to. In this respect, it is following child-like innocence. If the child ask "What is the use of what you are teaching me?" the answer is "Wait and see." Investigators know that the most astounding discoveries in human progress have resulted from insignificant ones.

GENERAL GARDENING.

THE HUSBANDMAN.

And yet unbroken peace, a life that knows no guile,
With treasures manifold are thine;
For thee, the spacious freedom of the open fields,
Caverns and living lakes and dewy dales,
And lowing cattle and sweet slumber time
Under the forest trees and woodland glade,
And haunt of birds and beast and rustic youth,
Patient to labor, bred to scanty fare.
Meanwhile our simple farmer tills the land
With the curved plough, his task year after year
The mainstay of his country and his home,
His children's children and his faithful steers
And droves of kine.

DRYDEN'S VIRGIL.

GROUPING PLANTS IN ONE POT.—We all know what beautiful combinations are effected by arranging various small ferns in one small pan or fern-dish. Of course, this method can hardly be considered more than temporary, though very satisfactory for some time.

This same idea might be extended and used in connection with other pot-plants. Palms are, in a measure, so treated by planting three in one pot, making a good leafy appearance. But these are usually of one kind. Occasionally a large Areca may have a few small Cocos planted around it. But still other foliage plants could be treated in like manner. In small conservatories, where the plants are largely tended personally by the owner,—the one who is to get chief enjoyment from them,—we may usually observe "slips," the result of accident or intention, put in pots with larger plants of different description. If the pot be not already crowded with the roots of the older plant, and the soil and general conditions of moisture are good, the "slip" may root and develop nicely. The effect is generally good, and especially if the added plants are of a trailing nature and will cover an unsightly pot.

The principal thought the writer is desirous of expressing is that the "fern-dish" idea may be extended to the use of other plants and in larger proportions. Boxes may be utilized similar to the porch and window boxes in summer gardening.

TRANSPLANTING THE TRAILING ARBUTUS.—I would like to learn something of the habits and requirements of the Trailing Arbutus. We have a very coarse variety here in Western Florida which grows on poor, sandy land in sunny places, but I have not succeeded in transplanting it. I have a small specimen in a four-inch pot, sent here from Maryland this spring. It made a nice start, then suddenly died back almost to the roots, but it is now making a second effort to grow. I have it under whitewashed glass in ordinary potting soil. I have hope of making a success of it if I can keep it till next spring.

Perhaps some of your readers can relate an experience with this odd, shy creeper.

Chipley, Fla. W. G. JENNISON.

[Our correspondent echoes a cry that has always been heard as far back as the writer can remember. This plant, the flower of which is dear to so many hearts, is of a rather sedentary character; it seems to barely more than exist, as a rule, in its own home, and to try to transplant it is to get unsatisfactory results. Perhaps it is artful in this, for it may be doubted that the public would care for it so much if it were more easily secured. Like the lover's caress, it is the sweeter for a struggle to obtain it.

In a little woods on the Meehans' Nurseries is a tiny Arbutus that was planted there perhaps fifteen years ago. It lives, but seems to make no growth, and it apparently never flowers.—ED.]

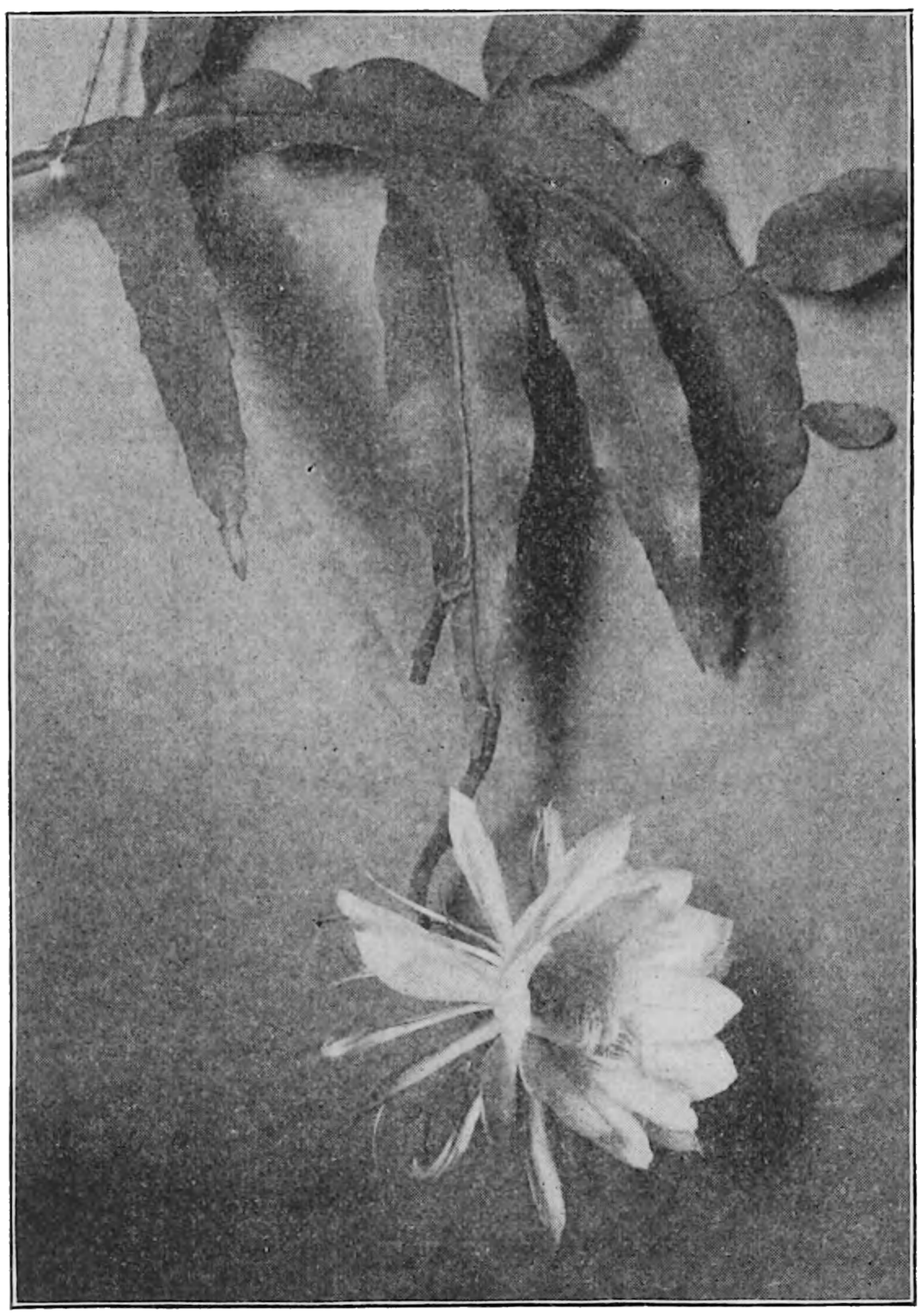
PRUNING HYDRANGEA PANICULATA.—We have some Hydrangeas (not *grandiflora*) growing in the ground, that need severe trimming; cutting into the new wood is not enough. Can we cut back into the old wood as far as

we want and not prevent the bloom next summer; and shall we do it now or in the spring?

Churchville P. O., Md. MRS. J. C. K.

[These are presumably *paniculata*, the plant from which the variety *grandiflora* sprang, and the method of pruning would be quite the same. As a rule, new buds spring readily from old wood after pruning, and the new shoots are pretty sure to develop in ample time to give an abundance of bloom. Winter pruning is what is desired, and February would doubtless prove a very acceptable time. —ED.]

EPIPHYLLUM LATIFRONS — From a photo kindly sent by Mr. C. E. Pleas, Chipley, Florida, the figure is presented of *Epiphyllum latifrons*, a species that has of late been made to masquerade as the "night-blooming cereus" a name long associated with *Cereus grandiflorus*. This, however, is not the fault of the plant itself, which has many points of interest. The night opening is a character which it possesses in common with many members of the cactus family. The photo was taken by flash-light, and is a grand success. Of this, Mr. Pleas says: "One peculiarity of the flower is its sensibility to light. In focusing the camera it was necessary to hold a lamp close to the blossom, whereupon it would slowly but surely close its petals, so that I had to wait a half hour after focusing for it to re-open before making the flash."



EPIPHYLLUM LATIFRONS. (NIGHT-BLOOMING).

There are many interesting points connected with the life history of this species. The usual succulency of the bark of the cactus has been almost transformed to true leaves. The very long tube to the flower is striking. This tube is often from six to eight inches long, and if, as some speculative writers insist, flowers have become adapted to exclude certain insects and favor others, it would be interesting to know what insect is the beloved in this special case. Moreover, it is always formed like a siphon, which would seem to be an additional obstruction to undesirable attentions. The opening of the blossom is well worth watching. It commences with the lowermost scale forming the sepals, and there is a gradual unfolding—a step by step up the ladder—until the broadest upper petal is reached. It remains in this condition only a few hours, when it closes its eye, and life has fled by morning. These observations were made on a remarkably fine specimen placed on our library table by Dr. W. M. Alrich, of Germantown.

EFFECT OF PRUNING ON THE CHARACTER OF TREES.—Two very interesting photographs sent to the editor by Mr. Paul B. Riis, Thompsonville, Conn., illustrate certain effects of pruning.

A number of trees of Rosemary Willow were set out, being grafted on stocks of the Pussy Willow. Half the number were pruned at the time very severely, and again more lightly the next year. The unpruned plants made much less growth, but maintained a beautiful, graceful, somewhat pendulous habit; those pruned grew with great vigor, producing numerous branches of upright, semi-globular appearance, which was rather stiff and unnatural. All were grown under the same conditions, yet the two lots of trees scarcely bore any general

East of these trees stands a magnificent Hemlock Spruce, *Tsuga Canadensis*, twenty feet across its lower branches, which recline on the ground; it is about thirty feet high—a most beautiful specimen of this grand and graceful tree. In front and to the right of this stands the gem of them all, a blue form of the *Picea pungens* and doubtless the finest specimen in cultivation. Pen cannot describe its beautiful silvery-blue color or its sturdy, robust form; this tree is thirty feet high and twelve feet from tip to tip of branches, the lower branches resting on the ground. When this tree was only four feet high Mr. Patrick Barry, of Rochester, N. Y., offered $75 for it, but the offer was refused.

DOUGLAS FIR

There are very few people who have seen one of the most beautiful views of the Blue Spruce. On a moonlight night when the dew is falling, stand near the tree with the moon at your back so that your shadow will be cast at the base of the tree, and nature will paint for you one of the grandest pictures ever seen, nothing could be more beautiful. It reminds one of the most beautiful Mexican silver filigree work set with diamonds.

To the east of this specimen is a Douglas Spruce, *Pseudotsuga taxifolia*, its dark-green foliage contrasting finely with its blue neighbor; and as it stands there in its stately grandeur barely fifty feet from the Hemlock, it is easily seen why its discoverer named it *Pseudotsuga*, or hemlock-like, as it partakes more of the form of the Hemlock than of the Spruce.

This nook, while beautiful at any season of the year, is simply grand when Nature takes on its warm robes of spring, lighting up the nook with the new golden growth of the Hemlocks, the almost white growth of the *concolor*, the vivid green of the green spruce, harmonizing so well with the dark, sombre color of the older needles, the pale bluish color of the *Englemannii*, and the bright-blue of the Blue Spruce, making a picture never to be forgotten when once seen.

THOMAS H. DOUGLAS.

Waukegan, Ill.

SLOW GERMINATION OF SOME SEEDS—During February of 1901, I sowed three species of *Eremurus* seed, *Alstræmeria*, and *Romneya Coulteri* seeds also. These seeds were sown on a bench which had previously been planted with violets. I attended to these seeds for over three months, the only seeds germinating during that time being about eight *Romneya Coulteri.* Finally I let the soil dry out.

Not requiring that portion of the bench this winter, in which the above-named seeds were planted, I thought that I would use it again for the same purpose.

In December I gave the bench a good soaking with water, my object being to start any weed seeds in the soil.

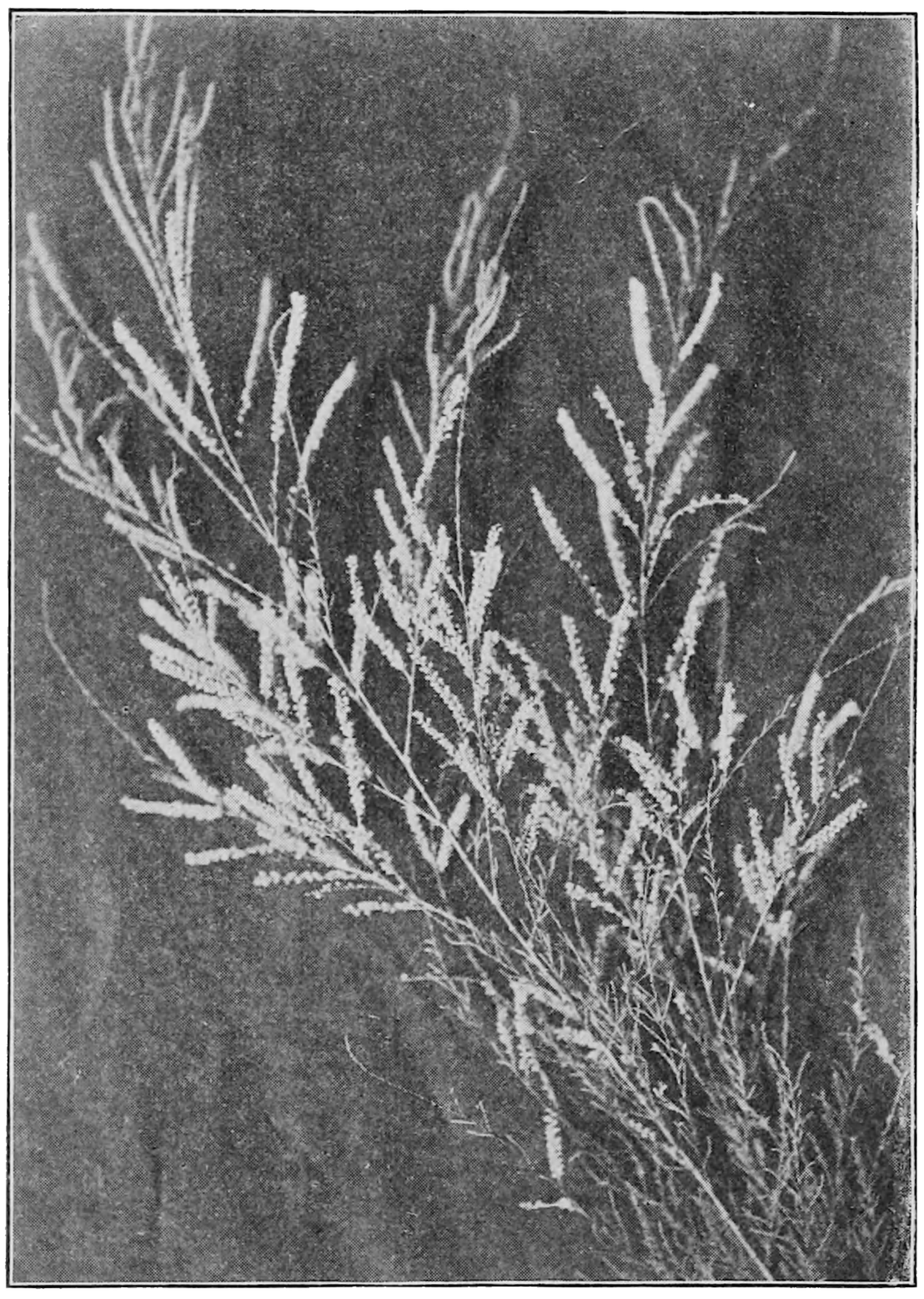
In January I put on an additional one inch of soil and seeded some portion of the bench; but not that part that the *Eremurus* and other seeds were planted in. Towards the end of January the *Eremurus*, *Romneya*, and *Alstræmeria* seeds began to germinate, and at this date, March third, some of the young seedlings are still pushing through the soil, the seed having been sown over a year.

I do not believe that much of the seed would have germinated had I attended to them for six months instead of nearly four months; they germinated at their natural time. Previously I have had very poor success with *Romneya* seed, also with *Eremurus* seed. I have no doubt had they been left in the boxes until another year a great many of the seeds would have come all right.

WM. WOODS.

Lenox, Mass.

[Seeds with hard coats are frequently long periods germinating. By soaking them in lukewarm water for a day or two the shells may sometimes be softened, and earlier germination is encouraged. Some hard-shelled seeds can be assisted by filing through the hard coats, allowing moisture to enter.—ED.]



TAMARIX

NEW OR RARE PLANTS.

TAMARIX.—The Tamarix illustrated by the accompanying cut is unlike most others in that it makes a large, quick-growing tree, with fine foliage, abundance of flowers in spring and again in mid-summer, continuing then to bloom until cold weather. It is a rapid grower, making an erect trunk from which its abundant branches and fine-cut foliage—soft and feathery, with its pink flowers, make it a tree remarkable as it now is rare.

I have seen a tree of this kind with a diameter of trunk of 12 or 15 inches and a young tree yet. It is supposed to come from the Amoor River country, which is the boundary between Siberia and China, and it is entirely hardy in this country and thrives in any soil. It is distinct from the *Amurensis* imported by Professor Budd. One great advantage this tree has, and that is that it will grow and thrive in almost any soil or situation—from the dry Southwest to the salt air of the coast; this trait making it very desirable for city yard and park planting, as also at the seashore. It is to be regretted that our florists have not discovered and made use of this, as one plant will furnish a large amount of fine green for cutting all summer, and this will keep the tree dwarf enough for any yard.

The spray of bloom was cut after a four weeks' drought.

A. H. GRIESA.

Lawrence, Kan.

[The remarks and illustration of the flower follow appropriately the specimen tree of Tamarix shown in the November issue.

The Russian Tamarix is *Tamarix Odessana*, and the description and illustration furnished by Mr Griesa seem to fit this species. In eastern gardens are two very hardy and beautiful kinds, *Tamarix Gallica* and *T. tetrandra*, which grow very rapidly, and make small trees of great beauty. There is one in a city yard of Philadelphia that must be nearly half a century old—possibly some thirty feet high,

and there was formerly a grand specimen on the grounds of Hoopes Brothers & Thomas, at West Chester, Pa.]

ABIES HOOKERIANA.—The illustration which these notes accompany is of the *Abies Hookeriana*, one of our Pacific Coast evergreens, and one which, considering its beauty and hardiness, is singularly scarce in collections in this country. Unlike another species from the Pacific Coast, *A. Mertensiana*, this one seems quite hardy about Philadelphia, so much so as to indicate its probable hardiness north of this. These two *Abies*, as well as our common Hemlock, are all properly Tsugas, and in appearance are enough alike to proclaim their relationship. But *Hookeriana* has lovely blue foliage, almost equaling that of the famed Colorado Blue Spruce, and, in addition, becomes a tree of upright, pleasing outline. The *Mertensiana* is much nearer our common Hemlock in appearance than the *Hookeriana* is.

ABIES HOOKERIANA

It may be that lack of knowledge of its hardy character has caused it to be so little planted. Just at this writing I cannot remember another one growing in this vicinity besides the one from which this photograph was made. This tree is on the grounds of Mr. John T. Morris, Chestnut Hill, Philadelphia, a great lover and patron of horticulture, and the owner of beautiful grounds, which are a great pleasure to those who visit them. And in connection with this it may be said that on the same grounds has been planted a collection of evergreens extensive in its character, small plants now, but the basis of an exceedingly fine collection in the course of time.

JOSEPH MEEHAN.

[It should be observed that, like the Colorado Blue Spruce, the depth of color varies on different specimens. Grafted plants, because selected for that method of propagation, are usually most certain to have the desired beautiful color; seedlings are uncertain.—ED.]

BIOGRAPHY AND LITERATURE.

UNDER THE HOLLY BOUGH.

Let sinned against and sinning,
Forget their strife beginning
And join in friendship now;
Be links no longer broken,
Be sweet forgiveness spoken
Under the holly bough.

CHARLES MACKAY.

ANNUAL MEETING OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—The fifty-second annual meeting of the American Association for the Advancement of Science, and the first of the "Convocation Week" meetings, will be held in Washington, D. C., December 27, 1902 to January 3, 1903.

Washington, D. C. L. O. HOWARD.

CHARLES H. MILLER.—A sterling member of the Landscape Gardening profession, in the person of Charles H. Miller, died at his residence in Mt. Airy, Philadelphia, Sunday, November 2.

At the time of his death Mr. Miller held the position of Consulting Landscape Engineer of Fairmount Park, which was tendered him at the close of the Centennial Exhibition in 1876.

Mr. Miller was born in 1829 at Winchester, England, and was a grandson of Charles Hayes, Mayor of Winchester.

He studied the art of Landscape Gardening under the most celebrated engineers in England—Rogers, Felix and others—and was associated with Sir Joseph Paxton at the Crystal Palace; he also studied at Kew Gardens.

After several years spent in America he commenced his professional career at Mt. Airy, in 1863, in which he was eminently successful. For some years during this same period he was in partnership with the late David G. Yates, under the style of Miller & Yates; but in 1887 he concluded the Landscape Gardening profession might best have his undivided attention, and his interests were disposed of to Mr. Yates.

Mr. Miller was a vestryman of Grace P. E. Church, Mt. Airy, for over thirty years; and a man well esteemed by his townsmen. A widow and two daughters survive him.

ANALYTICAL KEY TO SOME OF THE COMMON FLOWERING PLANTS OF THE ROCKY MOUNTAIN REGION, by Aven Nelson, Professor of Botany in the University of Wisconsin; published by D. Appleton & Co., New York.

The Rocky Mountain flora is one of notable interest, and this helpful key will be welcomed by every botanist of any class. The author states that "The booklet is not offered as a substitute for a manual of the region, but rather as an introduction, which will prepare the student for the better use of a manual."

WILD FLOWERS OF CALIFORNIA, by Mary Elizabeth Parsons; published by Payot, Upham & Co., San Francisco.

This attractive book of 400 pages, as a field companion for Californians, or as an admirable reference work to others, has more than ordinary merit.

Most of the prominent flowers of California are carefully described and illustrated by full-page pen-and-ink sketches by Margaret Warriner Buck. For the convenience of novices, the arrangement of the lists is according to the color of the flowers. The indexes and explanations are carefully prepared; and the nomenclature according to well-known usage.

AMERICAN HORTICULTURAL MANUAL, Part I, by J. L. Budd, Professor Emeritus in Horticulture in the Iowa State College of Agricultural and Mechanic Arts; published by John Wiley & Sons, New York

This part comprises the leading principles and practises connected with the propagation, cultivation and improvement of fruits, nuts, ornamental trees, shrubs and plants in the United States and Canada. It describes and discusses all methods of propagation by seeds and other means, as well as transplanting, pruning and general care of trees and orchards.

PROF. WM. WHITMAN BAILEY.—For a number of years the readers of MEEHANS' MONTHLY have been privileged to enjoy some of the writings of Prof. W. W. Bailey. It is therefore with pleasure the following sketch of his life and a reproduction of his photograph are presented. We rejoice thus to strengthen our acquaintance with one whose articles hold so much attractiveness in their lines:

William Whitman Bailey, youngest child of Professor Jacob Whitman Bailey, of West Point, the renowned microscopist, and of Maria Slaughter, of Culpeper Court House, Virginia, was born at West Point, N. Y., on February twenty-second, 1843. Strong and active up to his ninth year, when, July 28, 1852, he was present at the burning and total destruction of the "Henry Clay" at Yonkers, N. Y. Here he was saved as by miracle, but suffered so much from shock that for several years it was supposed he would die before attaining manhood.

His first training was at the school for officers' children at West Point, where among his play-fellows were Capt. A. T. Mahan, U. S. N., Capt. Robert E. Lee, Jr., son of the famous Confederate General, Prof. John W. Weir, of Yale, and Major General Chas. F. Roe, of New York.

A few days only before the death of his father, February 26, 1857, he removed to Providence, his father's early home. There he entered the University Grammar School, conducted by the famous Lyon brothers. In September 1860 he entered Brown University, and in 1864 was graduated. Thereafter he served for a time in the Chemical Laboratory at Brown, and in 1866 as Assistant Chemist at Manchester Print Works, N. H. From thence he was called as Assistant to Profs. Eliot and Storer in Chemical Laboratory of Massachusetts Institute of Technology.

In 1867-68 he was, for nine months, Botanist of the U. S. Geological Exploration of the Fortieth Parallel under the late Clarence King. When his health failed he was succeeded by the famous Sereno Watson, with whom his relations were always most intimate. Upon his return east, he was for a short time Deputy Secretary of State for Rhode Island. From the winter of '68-'69 to 1871 he was Assistant Librarian at the Providence Athenæum.

PROF. W. W. BAILEY

Even while, for the sake of support, pursuing various occupations, even including a brief and inefficient foray into journalism, his aim remained fixed on Botany—and he, indeed, taught it in schools and private classes.

In 1877 he was appointed Instructor and in 1881 full Professor of Botany in Brown University, a chair which he still occupies. He first began to write for publication in 1868, in a few tentative letters from the West to the *Providence Journal*. For that newspaper he has constantly written ever since. Also for *The Independent*, *The Aldine*, *Appleton's Journal*, *Education*, *Outing*, *N. E. Journal of Education*, *American Naturalist*, *Rhodora*, MEEHANS' MONTHLY, etc., etc.

From Brown University he has received the degrees of Ph. B. and A. M. At the centennial of the University of New Brunswick, Canada, in June 1900, he was awarded the honorary degree of LL.D. He is at present Vice-president of the R. I. Chapters of both the Phi Beta Kappa and Sigma Xi—a rather curious conjunction of

honors. He is also president of the R. I. Horticultural Society, a patron of the Boston Society of Natural History, member of the Newport Natural History Society, N. E. Botanical Club, *Societe Internationale des Botanistes*, Sons of the Revolution, Grand Army of the Republic, the Psi Upsilon Fraternity, etc., etc. In 1862 he served as a private in the 10th R. I. Volunteers. He is author of "Botanical Collectors Handbook," "Among Rhode Island Wild Flowers," "New England Wild Flowers," "Botanical Note-book," and "Botanizing."

In 1881 he married Eliza Randall Timmons, by whom are two children, Whitman, born April 2, 1883, and Margaret Emerson, born October 12, 1885.

TRIBUTES TO THE WORKS OF THE LATE THOMAS MEEHAN.—It would be impracticable to do more than here note in passing a couple of the many earnest expressions of regret concerning the discontinuance of MEEHANS' MONTHLY, and the words of appreciation showing its usefulness and the hold it had on the hearts of so many lovers of "Wild Flowers and Nature."

"It is with genuine regret that I learn of the proposed discontinuance of MEEHANS' MONTHLY, and though you may not unlikely think it a case where 'blessings brighten as they take their flight,' I feel so strong an impulse to express my regret that I am going to indulge myself. Your MONTHLY has filled a field so peculiarly its own, and one so unique and so much needed, that lovers of flowers everywhere will be sorry to lose it. For myself I feel the loss a personal one, for I am greatly interested in our native flora, and realize what a fine work the late Thomas Meehan carried on in placing its specimens upon record. One of my treasures is a set of Mr. Meehan's books, "The Native Flowers and Ferns of the United States," of which the MONTHLY has been in a way a continuation.

Regretting the exigencies which deprive us of the valued MONTHLY, and congratulating you upon the ability with which it has been sustained."

Detroit, Mich. ELIZABETH JOHNSTONE.

"It is with deep regret that I learn from the November issue of the MONTHLY that it will close its career with the December number. It is difficult to realize that its mission is to come to an end after receiving and welcoming it so long. There is one consolation, however, in the thought that its beneficial influence in popularizing scientific horticulture will never cease, but will go on to the end of time.

It was in January, 1870, when I read with pleasure and profit the number for that month of the older 'Gardeners' Monthly,' which was at that time, I believe, the only publication in America circulating generally among amateur horticulturists, gardeners and florists, spreading its useful information and engendering inspiration for higher ideals wherever it went.

About that time it was when the writer hereof worked in the greenhouse department of the late Thomas Meehan and learned how good and great a man he was. It was in the pages of the older 'Monthly' that the early efforts of the undersigned first appeared in cold type, and the kindly advice and wholesome encouragement received from him in those days will be forever held in grateful remembrance"

Chestnut Hill, Phila. EDWIN LONSDALE.

A PLEA FOR HARDY PLANTS, with suggestions for effective arrangement, by J Wilkinson Elliott; published by Doubleday, Page & Co., New York.

But few would suppose it necessary to make a plea for hardy plants, for who would not for general purposes prefer them to tender ones. So would we reason upon a first glance at the title of Mr. Elliott's charming book, "A Plea for Hardy Plants." But the author correctly states that "There are some people who persist, and at considerable outlay and trouble, in using thousands of tender bedding plants to make poor representations of inanimate objects"; and, further, that "The annual expenditure for suburban and country homes is enormous, and while an architect is always employed to design and plan the house, with but few exceptions the treatment of the grounds is entrusted to the nearest two-dollar-a-day jobbing gardener, or the owner is his own landscape gardener. The result is always unsatisfactory. Fifty per cent. of the cost of the better class of houses is expended with the desire of producing beauty; one dollar intelligently spent on the grounds will afford more beauty than will ten spent on the house. I have endeavored to show this by good pictures

use of trees for almost every purpose apart from ornamental gardening.

Every chapter contains interest, and the matter is clearly but briefly placed before the reader. One of the best tells of the various uses of wood, considering the subject from a commercial aspect; and another gives the values. "Forest Problems" would be helpful to many having similar questions before them. "Injuries to Trees" gives helpful hints of a very practical nature and available for use in many unconsidered cases. "Forest Mensuration" gives a good basis for that portion of forestry study not ordinarily explained outside of a college course, and is of inestimable value to those who may already be possessed of a good general knowledge of forestry practises.

The work is well illustrated by half-tone and other cuts, which are well distributed amongst the second part, "Trees of Minnesota." The third part, "Forest Trees of the United States," is a condensed list of all trees suitable for consideration by the forester in any part of the country. The cost of the work is so extremely small, it should be in the hands of every one interested in forestry or general horticulture.

NATURE STUDY AND LIFE, by Dr. Clifton F. Hodge; published by Ginn & Co., Boston.

The modern education of children is so different from what it was a few years back, the older educators, could they witness present methods, would be astounded and perhaps unbelieving. Not the least of the advances has been in the study of nature, by which the student is taught the power of observation and the influence of natural laws upon ordinary things.

Dr. Hodge's book will be principally helpful to teachers of nature study; it is largely suggestive, as it could not possibly treat such a huge subject very thoroughly in its 500 pages. But it will be interesting to the students also, and is, in fact, in use as a text-book.

The simplest subjects are very rightly chosen, the child being taught about its animal pets, the garden plants and home, common insects and birds. The whole teaching tends to "stimulate spontaneous out-of-door interests."

GENERAL NOTES.

EDITOR'S NOTE.—As the remarks in the November issue gave the real reason that called for the termination of MEEHANS' MONTHLY, it is impossible to add anything of explanation, and the editor hopes no words are necessary to strengthen the statement that the pressure of other duties make an obstacle that is insurmountable. But this relinquishment is made not without hope that every one who has been a reader of the MONTHLY will realize that the Editor will always maintain the same interest in their queries or letters as was shown in the past; and he hopes the many friends gained in the one capacity may be considered such in the future.

NOTICE TO SUBSCRIBERS:—Most subscriptions to MEEHANS' MONTHLY expire with the end of this volume; but a number do not, and some little balance may be due the subscribers.

The publishers have declined several attractive offers to dispose of the unexpired subscription list to be filled by other periodicals of a horticultural and botanical nature. Some may consider it absurd to admit sentiment to what is manifestly a business venture, but nevertheless the publishers wish no authorized successor to the work.

It is suggested to those who have not the complete set covering 12 volumes, that they secure back numbers to at least balance their subscriptions. The permanent value of the work is such as to make such a course desirable. Every one should possess a complete set of the colored plates and texts, as they will always contain interest and cannot be duplicated in any other publication. The "Native Flowers and Ferns," by the late Thomas Meehan, is now out of print and cannot be had at any second-hand book-store, which is evidence of the value in which it is held by every possessor of a copy. Full sets, bound and unbound, can still be furnished except of one number; some issues are running low.

ANNUAL MEETING OF THE ARKANSAS STATE HORTICULTURAL SOCIETY.—The date of the regular annual meeting of the Arkansas State Horticultural Society has been changed to the second Tuesday in February, 1903.

ERNEST WALKER, Sec'y.