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CONTENTS

The Use of Ferns in the Garden in the Northwest. LOUISE STARKER	87
The Christmas Tree Planting at Altadena, California. A. D. SHAMEL	96
A Horticultural Journey in Sicily and Italy. HELEN M. FOX	100
A Review of Current Plant Literature. CLARA J. WELD	107
A Book or Two	126
The Gardener's Pocketbook:	
<i>Robinia hispida</i> . HELEN M. FOX	129
<i>Zenobia pulverulenta</i> . HELEN M. FOX	129
<i>Lycoris radiata</i> . WYNDHAM HAYWARD	130
Double Gerberas. WYNDHAM HAYWARD	134
<i>Telopea speciosissima</i> . ERIC WALTHER	136
A Weeping European Larch. BERNARD HARKNESS	138
A Studied Rock Planting. BERNARD HARKNESS	138
<i>Rhododendron ombrochares</i> . ERIC WALTHER	140
<i>Lilium tenuifolium</i> . HELEN M. FOX	141
<i>Syntherisma rotundifolia</i> . DREW SHERRARD	144
<i>Begonia Evansiana</i>	146
<i>Rhododendron indicum</i> var. Beni-Kirishima	146
<i>Aquilegia flabellata nana</i>	150
<i>Osmanthus ilicifolius</i>	150
<i>Allium albopilosum</i>	152

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The Use of Ferns in the Garden in the Northwest

LOUISE STARKER

WHEN we think of a garden, we immediately picture a gay perennial border, a rockery in fine bloom, a rose garden, or, perhaps a bed of annuals which provides a fine display of color; but there is another sort of garden, more restful and quiet, always innocent of bloom, but beautiful and tranquil from early spring until frost—a garden of ferns. Flowers are good advertisers, as indeed they must be to attract the insects they require, and in our delight at their beauty we are apt to overlook the less flamboyant charm of the ferns; a quiet loveliness depending for its appeal upon subtle differences in shades of green and shape and quality of leafage.

Ferns are the subject of my talk today, and it occurred to me that perhaps it might be well to start out with a working definition of a fern, so that we may start fair from the beginning. There are a few flowering plants such as asparagus and parsley which look very much like ferns, and some ferns such as the hart's tongue and clover ferns which do not correspond in looks with the conventional idea of ferns. There are two easy ways to tell ferns from flowering plants which may resemble them—ways so simple that no special knowledge of botany is necessary to appreciate them.

In the first place, true ferns never produce either flowers or seeds, and a little watching of the suspected plant will usually reveal whether there is or has been any bloom. In the second

place, the new fern leaves always come through the ground tightly rolled in neat coils which gradually unfurl to make the new frond. It makes no difference what the new leaf will look like when it is mature; it always starts life in the same way, snugly curled in upon itself like a miniature fiddle head. Flowering plants put forth new shoots which gradually lengthen out into branches, and never unroll as ferns do.

Ferns do not make seeds, but spores which usually appear as small brown spots on the under sides of the leaves. In some types of ferns all mature fronds bear spores, while other types develop special fruiting leaves, quite different in character from the vegetative foliage. When fern spores germinate, they produce a tiny plant known as a thallus which is not at all like the parent fern in appearance or characteristics. The fern plant proper develops from this thallus.

This habit of generation was most puzzling to the ancients, and, indeed it was not well understood until comparatively recent times. The people of long ago realized quite well that new fern plants appeared, but to their surprise they were never able to find any flowers or seeds on the ferns. There must be seed, they argued, or how could there be new plants? If they could not find the seeds, then they must be invisible; but, if the seed were invisible, might it not be possible that the lucky person who

found some of the seed might learn the secret of invisibility? Legend had it that on St. John's Eve the ferns-seed would be ripe and ready to fall, so on that night the woods would be quite full of people putting down cloths under the fern plants to catch the miraculous seed, but history fails to record that any person had any success in this particular quest.

It is really quite surprising how little people know about ferns, even in a country like our own Northwest which is full of lovely ferny woods and so rich in native species and varieties. The common brake, the sword fern and the maidenhair are too widespread and abundant to be overlooked by even the most unobserving, but that is as far as most people can go. A neighbor who is becoming interested in ferns solemnly informed me the other day that a friend of hers who is quite a botanist had told her that there are only six kinds of ferns which grow wild in Oregon. I was able to show her ten different native varieties within about a ten foot space in my rockery without having to refer to the wild garden where most of my ferns are growing. There are literally dozens of kinds of ferns which are indigenous to Oregon and the Northwest.

Many persons suppose that all ferns need deep shade and abundant water, but there are types which live in rocks in partial sunshine and receive little if any water during certain seasons of the year. Such ferns are ideal for the rock garden and add a note of contrast and accent to the general scheme of planting. They will come almost as an answer to prayer for those portions of the rock garden which are too shady for alpine plants. For instance, that part of the rock garden which

you built in the shade before you knew as much about the requirements of alpine plants as you do now, and which always looks a bit ragged and seedy, or that place where the trees have grown so much and now make a quite deep shade. You have no idea what a bower of beauty it might become if it were planted to ferns with perhaps a few wild flowers for accent. I have in mind a lovely rock wall in a garden I know of; a steep bank set with rocks in partial shade which is a continual source of delight from the tiny delicate ferns at the base to the waving filmy plumes of the maidenhair at the top. Each fern is set with an eye to its particular needs and with a true appreciation of its value and a sure knowledge of the place where it should be planted to thrive best and show off its beauty to the greatest advantage.

The north side of the house; a place where few things grow well is often given over to a few sword ferns, but there is no reason why it cannot be made into an acceptable fern garden which would not require a very great outlay of time, money or water. The ostrich fern, the cinnamon fern and the various *Woodwardias*, all large ferns could well be used in such a situation, and there are numerous small sorts which would be equally suitable. The use of any or all of these with, perhaps, a few rocks added would add greatly to the interest and beauty of a place which is apt to be regarded as rather hopeless from a garden standpoint.

A wild garden or other tree shaded plot of ground is, of course, the place par excellence for a fern garden. All ferns appreciate some shade and many sorts find it quite necessary to their well being. Ferns and wild flowers

make a very happy combination. The dainty early flowering wild plants come into bloom before the ferns have developed far enough to hide their beauty, and when they have finished flowering, the expanding fern leaves do them the kindness of making a screen to hide their early decay.

The late taller flowers like the lady slippers and primroses are large enough to hold their own with the ferns and the contrast of the colorful blooms against the delicate green of the young fern leaves proves mutually advantageous to both plants. As the season progresses, the ferns continue to develop, and when the flowers are past, they reign supreme in the garden until time for the frost.

Ferns can be used as a border planting around a pool with a charming effect. They provide an atmosphere of indefinable charm and restfulness with their delicate fronds reflected and multiplied by the still waters which they surround. A fern-bordered pool will add a note of delightful repose to the garden which cannot be so successfully achieved in any other way.

All ferns prefer a rather loose and friable soil which is rich in humus. Even those sorts whose roots are tightly wedged between rocks will be found to be growing in a soil composed of decaying moss or other similar vegetation. Many ferns have no objection to rock chips in the soil and some like sand. Nearly all our western ferns and many of the eastern varieties prefer a slightly acid soil, but some types, like the walking fern need limestone.

The gardener who is having his first experience with ferns should bear several things in mind. In the first place, collected ferns are rather de-

liberate creatures, and do not become acclimated to the garden quite so quickly as do many flowering plants. They take a little longer to become acquainted in new surroundings, but once they are pleased with a situation, they begin to grow freely and often become finer and more symmetrical than they do in the native state. Many ferns will grow well in an open situation if they are given plenty of water, or they can be grown in shade and not watered very often, but few indeed are the ferns which will flourish if they are deprived of both shade and water at the same time. Of course there are many ferns which in nature survive a dry season every year, but Nature does not demand that they stay fresh and green the year round as we want them to do in our gardens. If we expect them to be always in the pink of condition, we must treat them with kindness and care to bring about the desired result.

There is a great fascination and satisfaction to many gardeners in collecting their ferns from the wild, but I should like to suggest a thought in this connection if I may. If you are collecting a variety of fern whose requirements are strange to you, take only a few specimens. If they are suited to your garden, they will soon grow large enough to be divided, or you can make a second trip to the place where they are growing and collect more specimens, but if they perish miserably, you will not have the destruction of so many innocent plants upon your conscience. Our part of the country is so new, so full of an abundance of wild life of all sorts that it seems inexhaustible, but let us be warned by the experience of older states. The hart's tongue fern once so abundant in New York has become

so rare that it can now be found in only two counties in that state where it is protected from digging by a five hundred dollar fine. New Yorkers who wish to have this lovely fern in their gardens must send to nurseries in other states to procure it. We possess such a wealth of fern species, let us see to it that we do not carelessly deprive ourselves of our abundant heritage.

Many of the smaller ferns are excellent rock garden subjects; indeed they are found growing in rock slides where the only soil available is a scanty amount of decayed moss wedged in among the stones. The lace fern, *Cheilanthes gracillima*, is found in such situations on natural rock slides. Here it is apt to pick out for itself a deep narrow crevice at the base of a slightly overhanging rock, which will shade it for a part of each day. If a similar situation can be found for it in the rockery it will grow most happily. It makes a very beautiful plant with deep blue green foliage much divided, and of a thick and leathery consistency. The leaf stalk is dark brown and shiny. The plant has a somewhat lacy appearance, although it resembles *Torchon lace* rather than the finer sorts.

The maidenhair spleenwort, *Asplenium trichomanes*, is another rock fern which is content with only partial shade, and adapts itself very happily to garden conditions, often waxing finer and ampler in cultivation than in the wild state. The name of this fern has rather an interesting origin. It is not botanically related to the true maidenhair fern, but they share a habit which is responsible for the name "maidenhair." As the fronds or leaves grow old the green leaflets drop off, leaving the dark central

stem which persists for a long time. A collection of these stems must have suggested a maiden's hair to some imaginative observer. The name spleenwort goes back to the days of the herb doctors. The European member of this family was supposed to have healing properties in disorders of the spleen. It doesn't require much imagination to picture the good dames of the period brewing the ferns into some sort of dire concoction which was to be poured down the throats of protesting husbands and children, and I dare say, the worse it tasted, the more efficacious it was supposed to be.

It makes a fine compact clump of narrow delicate fronds with tiny rounded pinnae set on a shiny dark brown stem. An individual plant will produce a great number of these fronds which all tend to assume an upright position.

Asplenium viride which is a much rarer species is quite similar, except that it is much smaller in all its parts and has a green central stem.

The parsley fern, *Cryptogramma acrostichoides*, is found growing wild with the lace fern and the maidenhair spleenwort. It belongs to the class of ferns which produce two types of leaves, one for general vegetative purposes, and one spore bearing type. The two types of leaves are quite different in appearance, although their essential structure is not so very different. The spore bearing leaves are much more slender in all their parts and stand up quite stiffly in the center of the plant. The parsley fern is quite light green in color and rather lush in appearance. It has a delicate dainty appearance which is belied by its sturdy constitution. It will grow well in quite dry conditions.



Pellaea densa

Pellaea densa is an excellent fern for use against a rock or in a partially shady site. It has a fine deep color and a particularly handsome feathery appearance. I can think of no more beautiful sight than a well grown plant of *Pellaea densa* against a lichen covered rock.

Pellaea brachyterpis, the fir needle fern, is quite different in appearance

from the other small ferns. It makes stiff fronds about six inches high which look more like branches of blue spruce needles than anything else in the world. In time these ferns will make wide-spreading clumps, although they never get any taller.

The gold-backed fern, *Gymnogramma triangularis*, is another which goes in for originality of shape and color-

ing. It is somewhat coarser than most of the smaller ferns, deep green and leathery with decidedly triangular fronds composed of finger shaped appendages. It receives its name from the golden powder on the reverse side of the leaves. There is a variation with white powder known as the silver-back fern. It has the curious habit of rolling up its leaves in dry weather to minimize evaporation. It grows anywhere from five to ten inches in height.

The clover fern, *Marsilia vestitia*, is a tiny fern with a great deal of individuality. It does not at all resemble a fern, but looks like a small four leaf clover plant. However, it bears spores and its new leaves unroll just the same as all other ferns. It is perhaps more interesting as a curiosity than for its intrinsic beauty although it is an attractive plant when well grown.

There are any number of ferns which come under the general classification of Dryopteris. This species has many varieties which are widely scattered over the world. The Lady fern, *flix-femina* and the Male fern, *flix-mas* are found in many parts of Europe and North America.

The English gardeners have developed many very beautiful crested and fluted forms of the lady fern by careful selection and hybridization. American gardeners have apparently entirely overlooked the possibilities of producing beautiful ferns in this manner. Lady ferns are very tractable in the garden and multiply rapidly.

Many of the Dryopteris ferns are fairly large with lacy looking fronds of roughly triangular shape, rather wide in proportion to their length. They are light green in color and rather lax in texture. Some of them

need a good deal of water. Any or all of them are beautiful and desirable especially for background use in wild gardens or ferneries.

The oak and beech ferns are smaller than the other varieties of Dryopteris. They spread by running root-stocks and make a beautiful ground cover in shady places. They have decidedly triangular fronds and are very lacy, giving an indescribably light and airy character to the garden.

Our native *Woodwardia radicans* is one of the best large decorative ferns which grows wild in this part of the country. It is quite different in appearance from the other large ferns, and is less often seen. Its noble deep green leaves add beauty and a sense of dignity and stability to the garden. It is unexcelled for background plantings. The fronds will grow at least four feet high. The eastern varieties of *Woodwardia*, *areolata* and *virginica* are smaller in size, usually not more than twelve to fourteen inches.

The common sword fern, *Polystichum munitum* is most patient in captivity and will continue to exist for long periods of time under the most adverse conditions. Of course it tends to grow scraggly and un-beautiful under such treatment, which makes some people feel that it is an undesirable garden plant. Nothing could be further from the truth as a well grown sword fern is a very lovely thing, but it does like a little care and attention, although it will survive for a long time without them. The eastern *Polystichum acrostichoides*, or Christmas fern is much like the sword fern, but is smaller in all its parts with rounder pinnae. The holly fern, *Polystichum lonchitis* is a fern of similar habits and characteristics but the fronds are narrower and the pinnae are toothed on the edges.



Lomaria spicant

Polystichum plumosum, *plumosum compactum* and *viviparum* are three very beautiful plummy ferns which have been much improved by selection. They make lovely house plants, but are quite hardy in the garden. They have the curious habit of forming tiny buds in the leaf axils from which new plants can be grown. They are natives of Japan.

The deer fern, *Struthiopteris spicant* or *Lomaria spicant*, is one of the most beautiful of our larger native ferns. The leaves have the same general shape as those of the sword fern, but the pinnae are shorter and wider than those of the sword fern. They are fairly light green in color and quite heavy and leathery in texture as is natural in an evergreen fern. This is another fern which produces special fruiting fronds quite different in type from the vegetative leaves. The main foliage makes a flattish rosette of neat green stemmed leaves in the center of which rise the brown stemmed fruiting fronds. They are very stiff and straight and are quite slender in all their parts. The deer fern attains its greatest size and perfection in the coastal forests, but it is well adapted to garden culture and makes a good house fern.

The ostrich fern, *Pteris nodulosa* is admirably suited for use in shaded areas. The graceful fronds are arranged in a pleasing vase shape. They grow from three and a half to four feet high and are quite wide in proportion to their length and of a pleasing light green color. This fern is a good one to use for a background planting or as a specimen plant, for its individual habit of growth makes it very attractive in either capacity.

The royal fern, *Osmunda regalis*, is a very fine fern which in rich moist

soils will grow as high as eight feet. It is quite different in character from the large ferns we have been considering. They have all been of a simple pinnate form, but the royal fern shows no particular mid rib. The leaves which are very wide in proportion to their length have a very open effect. The side branches from the mid rib are set with wide flat pinnae set alternately on the stem, so that each leaf appears quite complex in structure. The spores are borne on the topmost pinnae of the individual fronds. Some very lovely crested forms of this fern have been developed.

The cinnamon fern, *Osmunda cinnamomea*, has two types of leaves. The seed leaves appear first in the spring, and are quite thickly covered with spores which turn a deep brown as they develop. It is the powdery brown character of these leaves which gives the plant its name. It is a sturdy and beautiful fern.

The interrupted fern, *Osmunda claytoniana*, is curious and original in its makeup. A first glance at its sworn-like fronds would make the observer feel that bugs or slugs had been at work on the plant and chewed off some of the pinnae at about the middle of the leaf. The truth of the matter is that this fern develops special spore-bearing pinnae at this point which are much reduced in size. It is from this circumstance that the plant derives its name.

The walking fern, *Camptosurus rhizophyllus*, is a handsome small evergreen fern with fronds varying in length from four to seven inches. The simple undivided fronds are heart shaped at the base and taper gradually to a sharp point. As the leaf matures, the tip bends over and buries

itself in the ground. From this tip a new plant develops, so that the fern "walks" about the garden forming new plants in places which please its fancy. In its native habitat it is found growing on limestone rocks, and it will not do well in the garden without lime.

The climbing fern, *Lygodium palmatum*, makes twining leaves which will grow as long as three feet and will climb up other plants or over supports placed for them. The leaves, which are quite viny in character, are set with bright green pinnae which are like a miniature maple leaf in shape.

The sensitive fern, *Onoclea sensibilis*, gets its name from the fact that the leaves die down when they are exposed to frost, although the plant is perfectly hardy. It is a large, rather coarse fern, very sturdy and tenacious of life which will grow under almost any conditions, although it prefers a moist rather heavy loam in a cool but not necessarily shaded position. The leaves are wide in proportion to their length and consist of a central mid-rib set with wide much scalloped pinnae. The seed leaves are very different in character from the vegetative fronds as the pinnae are much reduced in size, quite short, stiff and upright and covered with the brown spore cases. This fern does not make a rounded plant springing from a central crown, but produces single fronds along a running root-stock.

The hay-scented fern, *Dicksonia punctulobula*, has the same habit of growth as the sensitive fern. It is light and airy in character and makes a fine background for lady slippers. It is a most satisfactory fern for dry places in partial shade. In some parts of the east it seems to be a pest and some eastern garden books advise against its use in a choice situation, but it does not seem to display its troublesome propensities in this part of the country.

I fully realize that this rapid survey of varieties has been no more than a cursory glance at a few of the many ferns that can be used to add beauty, grace and variety to our gardens. In spite of the number and variety of our native ferns, our people are most decidedly not fern conscious. There are many gardeners in the east who possess lovely fern gardens and who would be keenly interested in our western natives if they knew about them. An acquaintance with some of these people might result in a mutual arrangement for trading our western ferns with some of their wild varieties.

The American Fern Society prints a quarterly Journal which has many excellent articles, although they tend to be somewhat technical and rather abundant in botanical language. Prof. Theodore C. Frye has recently published an excellent book on our own western ferns which should be of great value to all fern lovers.

The Christmas Tree Planting at Altadena, California

A. D. SHAMEL

Principal Physiologist, Division of Fruit and Vegetable Crops and Diseases

ONE of the outstanding ornamental tree plantings in the southwest, perhaps now the most famous one of all, borders Santa Rosa Avenue in Altadena, California. The trees that were set out there are deodars, *Cedrus deodora*, and they were planted by the late Captain Frederick J. Woodbury in 1885 in order to ornament a driveway to his ranch home and without any thought that they would one day become almost striking feature of a beautiful city that would grow like magic on his thousand-acre ranch property.

While it is impossible, after 50 years, to learn all of the facts about such a planting, the writer has thought that it might be of some interest to bring together all available information concerning the planting of those trees, particularly as it becomes more and more difficult as time passes to obtain the facts from first hand witnesses. An attempt will be made in this article to present as briefly as possible the result of a little investigation of the history of this planting.

The unreliability of personal memories of the details of such events is a fact that is well known to all who have tried to trace down the histories of such occurrences after fifty or more years have passed away. Furthermore, in this instance most of those having reliable first hand information have died. Fortunately, the man who actually planted the deodars along

what is now often called Christmas Tree Avenue, Mr. T. S. Hoag, is very much alive and has a keen memory of the details of their planting. It was our privilege recently, June 4, 1936, to visit Mr. Hoag at his home at 64 Valley Street, Pasadena, California, and to view the deodars in Altadena with him so as to learn the dependable facts as to his experience in that matter. These original observations together with other information relating to the history of that planting will be briefly recorded here for the benefit of those who may be interested.

The source of the seed from which the deodars were grown is a matter of considerable interest to some persons. On this point Mr. Hoag's recollections are probably the most reliable for several reasons, although he did not begin working on the ranch until about two years after the seed had been planted. He says that he remembers on several occasions hearing Captain Woodbury speak of the seed and his recollection is that he always mentioned that it came through Washington, D. C. In a letter dated March 2, 1936, from Mrs. Georgiana Woodbury Wildman, a daughter of Captain Frederick J. Woodbury, now living at Marshalltown, Iowa, the following sentence occurs: "To the best of my recollection the seed for these trees (the deodars) was not obtained from the Agricultural Department at



Mr. T. S. Hoag, who planted the deodars in 1835 while acting as foreman on the Woodbury Ranch, stands by the granite boulder with its bronze marker in the park at the lower end of the avenue.

Washington. I was a school girl living at home at the time and it has always been my understanding that the seeds were gathered and brought from India by John P. Woodbury, brother of my father, Capt. Frederick J. Woodbury, who was at one time joint owner with my father of the thousand acres on which the city of Altaneda is now located. John P. Woodbury left California before, or about the time the seed was planted under glass by my brother George, now deceased. They thrived and two years later, in 1885, the seedlings which had grown to a height of eighteen inches to two feet were planted by my father, assisted by my two brothers, Frank and George, and the workmen on the ranch."

In a letter to the writer from Dr. W. A. Taylor under date of December 28, 1932, the 1855 report of the Commissioner of Patents is quoted as follows, "after discussing wheat, corn,

sorghum, millet, and a number of nut and fruit trees and vines which had been introduced and disseminated, including cuttings of the 'Prune d'Agen,' and the 'Prune Sainte Catharine' from France, also cuttings of the 'Raisin' and 'Currant' grapevines, etc., includes a descriptive list of 'Plants which may be cultivated for their Fibre, or other uses in the Arts,' the last item of which on pages lx to lxiii discusses the Deodar or Indian Cedar. I am enclosing photostat copy of these pages on which you will note that the author states that several thousand bushels of the seeds of this were imported (to England) some four years ago by way of Egypt, and placed in the hands of reliable nurserymen to cultivate, on condition that they should return one-half of the product to the British Government at the expiration of three years. It appears not improbable that some trees of this species may have reached the patent office



At the lower end of Christmas Tree Avenue showing some of the deodars and some of the park planting. There are visitors to Christmas Tree Avenue even in June.

from that importation to England shortly thereafter in view of Mr. Browne's (D. J. Browne, U. S. Commissioner of Patents, 1853 to 1861) statements."

In a letter to Miss Frances V. Woodbury (granddaughter of Capt. Frederick J. Woodbury) at Ontario, California, under date of March 12, 1926, Dr. Taylor says, "In reply to your enquiry of the 23d ultimo as to whether this department has any record of sending to your grandfather, Mr. Frederick J. Woodbury, seeds of Deodar, *Cedrus deodora*, some 40 or 50 years ago, I regret to say that we are unable to find any record of distribution by the Department of either seeds or young trees of this species at that time, or before then. The absence of such record should not be

taken as indicating positively that such seeds were not sent out by the Department, however, as the records of seed and plant distributions are quite imperfect and incomplete prior to the organization of our present Office of Foreign Seed and Plant Introduction in 1897. Various importations of seeds, scions, etc., were made by the Department of Agriculture from foreign countries from the time of its organization in 1862. Even prior to that time such distributions and importations were made by the Patent Office, apparently as early as 1836."

There are some beautiful specimens of *Cedrus deodora* now growing on the Capitol park grounds at Sacramento, and in Stockton, as well as in some other northern California cities. The Sacramento trees appear to have

been grown from seed obtained from the trees on the W. B. West place at Stockton, according to Dr. Taylor, and there is a strong probability that the Altadena trees were also grown from seed secured from the Stockton trees. It is also probable that the Stockton deodars were grown from seed obtained from Washington, D. C.

The deodar seed was apparently sowed in a bed under glass on the Woodbury ranch about two years prior to 1885. Mr. Hoag says that he came to the ranch on May 1, 1885, as foreman of the ranch labor and that the deodar seedlings were growing in a bed under glass at that time, averaging about eighteen inches to two feet in height. Santa Rosa Avenue at that time was not a platted street but was a private drive to Capt. Woodbury's residence. Mr. Hoag says that he staked out the location of each tree under the direction of Capt. Woodbury, about 150 in all, and that several Chinese and white

laborers employed on the ranch planted the young seedlings during the summer of 1885 under his foremanship. A few trees of the original planting were subsequently removed in order to make way for cross streets.

At the present time the trunks of the 50-year old deodars average about 10 feet in circumference at a height of 3 feet from the ground and have an approximate average height of about 80 feet. They were set about 50 feet apart in the row and the lower branches have a spread of about from 40 to 50 feet, interlacing in each tree row. From time to time the tips of the lower branches have been tipped back by pinching off some of the terminal growth. No pruning has been done nor have the trees been injured by wind, insects or other causes and while little or no fertilizer has been applied to the soil about them, they have received some irrigation water during the long dry season of the year from adjacent groves and dooryard plantings.

A Horticultural Journey in Sicily and Italy

HELEN M. FOX

THE last days before a journey are so crowded with errands that something of vital importance is invariably left undone. Before this trip a final week of influenza prevented a thorough search for a botany of Sicily and Southern Italy. Since being in Italy I have learned there is no reliable botany exclusively for the flora of Sicily and the best books on the subject are floras of Italy. Meanwhile Bailey's Manual of Cultivated Plants enabled me to key down to the plant families even though it did not contain the species.

The Sicilians know only the names of a few plants and when they are asked about them, since their primary idea is to please the foreigner who spends his money amongst them, they will say any name rather than answer that they do not know.

The first excursion in Italy was from Naples, where we landed, to Pompeii. It was pleasant to find that the archeologists had replanted the gardens at Pompeii with the flowers which grew in them during the first century A.D. It was mid-January and in the gardens violets and iris were in flower. Besides, there were old-fashioned roses, box, acanthus, rosemary, oleanders, myrtle and a variety of asparagus which is eaten and was here used to margin the beds. They also had yews and these were clipped in the same fantastic shapes that are depicted in the frescoes. The Pompeians and Romans, as can be seen from the ruins of their homes, did not know how to make good floor

plans and in their gardens the flower beds are not laid out in geometric but in casual shapes. However, they are often arranged symmetrically. In the gardens the famous bronze statues such as the Dancing Faun and the Mercury are far too small to be in proportion to the size of the space. The era when Pompeii was built was evidently not one when good proportions prevailed. Such times as the Age of Pericles, the middle years of the Italian Renaissance, the eleventh century in France, the Georgian Era in England are infrequent. It seems to me they only come when the professed beliefs and the ethics of everyday life are in harmony. To word it differently, people can build gardens and houses in perfect proportions only when they believe in themselves and when they are living in full honesty.

From Pompeii the drive over the hills the Amalfi rises over rugged mountains. As we looked down into the level meadows below us we saw the landscape veiled in mists and colored violet and blue. The land looked like the sea except for the presence of white and cream-colored houses appearing like stones in the distance. Beyond the land was the blue sea. On the far side of the hills the road descends between orchards and terraced fields. Patches of a white daisy-like *Bellis perennis* only daintier, were growing where the ground had not yet been cleared of weeds. In Italy and Sicily every bit of arable space has been cultivated for so many cen-

turies that all the coarse and rank weeds have long since been destroyed and when the land is left to lie fallow or on the margins of roads the wild flowers which spring up are dainty and charming. Under the olive trees on the way down to Amalfi were drifts of plump purple crocuses, and in sunny exposures grew a yellow-flowered broom. In the vegetable and fruit gardens, cabbages, peas, carrots, artichokes and broad beans were being cultivated. Sometimes the vegetables were grown under almond trees and in rows between the grape vines. The soil is very rich and composed principally of decomposed lava from the outpourings of Mount Vesuvius.

After visiting around Naples we left for Taormina in Sicily where we were to spend three weeks. Taormina is known as a floral paradise and is considered to be one of the most beautiful places in Europe. Its reputation is not exaggerated. The little town scrambles up a hill and from its terraces there are magnificent views. To the east one hilly promontory succeeds the next and they make a sinuous outline jutting into the Mediterranean and beyond the sea are the blue hills of Calabria while to the south and west the picture is filled by the broad shoulders and snowy bosom of Mount Etna. A lazy cloud of white smoke is always drifting into the sky from the volcano. On clear days the whole scene, the sky, the sea, the very air are intensely blue, the color of the Madonna's mantle.

As around Vesuvius, so here, the land is rich with volcanic debris. The hillsides are terraced in the classical Italian fashion. From the distance the terraces look like grassy steps leading up the mountain sides. On these little ledges, for they are so

narrow as to hardly merit being called terraces, the olive, almond and citrus orchards are planted. During the course of thousands of years and in the present time as well, the peasants have been carrying manure and broken-up lava in baskets, on donkey back, along the narrow steep paths, to spread under their trees and it is almost miraculous the way they have kept their land fertile.

When we came to Taormina the almond blossoms were just beginning to open and the flowers lasted three weeks instead of the meagre few days our apple blossoms stay with us. Perhaps the climate has something to do with this, for it is decidedly cold at night and only from ten o'clock in the morning until four, when the sun shines, is there a pleasant spring-like warmth. The almond trees look like round soft clouds and exhale a fragrance composed of a mingling of heliotrope and almond. The blossoming trees filled the valleys, the gardens and the hillsides of Sicily. The blossoms are white except for the rose color in the calyces and the rose marking at the base of the stamens. Some of the trees seem to be all white and others appear a pale rose.

In the gardens the almond tree with its fluttery bloom and gray branches is often planted next to the gray-stemmed olive with its gray-green leaves. Both are shaped like wide-mouthed vases. Together they make a far more perfectly-balanced horticultural marriage than the pyramidal black cypress beside the almond which the Persians plant together to symbolize the strong masculine element protecting the helpless feminine one.

On the terraces under the orchards grow many of the pot herbs. They are weeds here.

Calendula officinalis ramps over the terraces and when it grows under lemon trees having pale yellow fruits hanging down between glossy green leaves it makes a striking ground cover. Often oxalis grows amongst the calendulas. It is called "acetosella" by the natives and has stems about twelve inches high and yellow-green upright somewhat campanulate blossoms. The wild calendula is much prettier to my taste, in its slenderness and the harmonious relation between the size of the bloom, the stem and leaves, than the top-heavy product of the plant breeders which now blazes forth in the catalogues. Sweet alyssum is a weed here and somehow it smells sweeter than under cultivation at home. Lupines grow under the trees and are often ploughed under for the nitrogenous value. The purple and blue wild sweet pea, the ancestor of all cultivated ones, grows under the orchards, as do purple vetches. A rose magenta verbena grows in large drifts too.

Mustard sends up its untidy stalks, but where does this ubiquitous plant not grow? Rue is here and has the same bitter scent as at home in the garden. Borage is found from Sicily up to Grasse on the French Riviera. It forms a lusty plant and its starry blue flowers look up from the ledges of the terraces. It too is charming under lemon or orange groves.

Between the stones along the mule paths leading up the steep mountains to villages and castles perched still higher up grows *Thymus zygis*. It is exceedingly fragrant. *Artemisia abrotanum* hangs in silvery clumps from the sides of rocks and often from the outer walls of flower gardens. It grows six feet high and as much or more across. Associated with it is

almost invariably a *Teucrium fruticosans*. This teucrium and the rosemary which also grows out from the rocks are the two handsomest plants of this part of the Mediterranean littoral at this season. The teucrium is an elegant plant and drops down graceful gray branches with gray leaves and is covered with pale blue flowers having two long projecting petals which form a lower lip. It does not set seed and is increased from cuttings but alas! it is not hardy in the northern climates. The teucrium lends itself well to clipping as does fragrant rosemary. The rosemary is everywhere here in Sicily. In gardens it is used as a hedge and trimmed. In one garden the inner side along the walk was clipped and the plant was allowed to billow out and be spangled with its light blue bluers on the far side. The blossoms of the rosemary were a lighter blue in the south and a deeper tone in the north of Italy. *Rosmarinus officinalis* var. *prostratus* is grown in gardens and is a creeping form clinging close to the surface it covers and has the same blue flowers as the upright variety.

Amongst the wild plants is a yellow-green euphorbia also hanging from the cliffs and *opuntia* is a frequent weed, with its prickly strangely-shaped branches and edible fruits. The peasants hang their wash to dry over the *opuntia*. The thorns evidently do not harm the linen and keep it from blowing away.

Parsley grows wild. Both the type and fern-leaved variety are found. In a damp meadow near Siracusa *Mentha rotundifolia* was growing. It smelled so deliciously, especially in comparison with the way it smells in my garden where the fragrance is predominantly of pepper that I was

discouraged and thought, "Why grow herbs at home where they are so much less fragrant than they are on this enchanted island?" Apple mint grows wild too.

Pot marjoram is found, and angelica. This last seemed to prefer a situation on the very tips of the hills. Fennel is a frequently-found weed and its feathery leaves grow out of the cornice of the temple at Segesta and all around its base as well. Fennel seems to taste less of anise here than at home. Once I grew some *Mercurialis annua*, the seed of which came from France with a shipment of pot herbs. It was here on the hills of Taormina. The leaves of the carnations were found too, and there must be many other herbs later in the season.

One day I had a real thrill on going high up the mountains. I found the starry purple anemones with petals like the ray florets of the daisies in a huge patch on a ledge. It was the same thrill as I had the first time I saw gentians growing wild on the edge of a glacier in Switzerland. Later the *Anemone coronaria* in all its varieties was seen in the meadows in quantities.

Lavender is associated in one's mind with rosemary but I did not find it growing wild in Sicily; however, I saw the *Lavandula spica* in gardens and often came across *Lavandula abrotanoides* with pinnate leaves and the flowering spikes terminating in a tuft of purple leaves. The *L. abrotanoides* is an annual for me but perennial here in the warmer climate as is the habit with so many plants.

The asphodels grew in amongst the opuntias, teucrums and artemisias, rising in clumps of pale pink liliaceous spikes, reminiscent of our own camas-

sias only taller and with a tougher bunch of leaves at the base of the stems. The asphodel was the flower Persephone was picking when Hades saw her, fell in love at first sight and carried her off in his chariot driven by his coal-black horses, down to his underworld home. Ever since the asphodel has been associated with death and no one touches them. Consequently it has spread itself all over the island and is especially thick at the base of the temples. The temples are the color of yellow ochre with a tinge of rose. The meadows around them are dight with bloom. The grass is so filled with asphodels, white and yellow chrysanthemums, purple lychnis, *Calendula arvensis* and countless other flowers that they resemble a *tapis fleuri* in a tapestry or the field in a Persian rug. At the base of one temple I counted twenty-five different wild flowers and amongst them was tiny arisaema like a dwarf jack-in-the-pulpit.

After the petals of the almond trees had fluttered to the ground the winter wheat came up, under the trees and over the hills as far as the eye could see. The whole countryside which at first had been pink was now a yellow green from the young wheat, as if some one had taken a brush and painted it. The green against the unbelievably-deep blue of the sky was particularly striking.

I had been told that narcissi would be abundant in Sicily but the only ones I saw were the *Narcissus tazetta* growing beside a stream on the road between Agrigento and Segesto. They had a delicious scent without any of the heaviness which characterizes them when they are cultivated.

At Taormina there is a fairly large English colony. They have brought

their love for flowers with them and enriched the floral population of the Taormina gardens a hundredfold until they are as teeming with flowers as the Sicilian villages are with people. Bougainvillea flings itself across pink, blue or yellow houses as do the semi-tropical varieties of the bignonias. In one garden belonging to an Englishman an entire terrace was planted with white stocks and the central axis lead out straight to the snowy summit of Mt. Etna. A stunning effect. Besides the plants grown in Italian gardens since Roman days and maybe earlier, there was everything these people could garner which would grow in the climate. Jasmine in white and yellow, roses, wistaria and euonymus climbed over walls; the ever-present bedding plants, the scarlet salvia was here as were the heliotrope, geraniums (they grew like shrubs), African daisies in every hue and violets. The single and double violets smell especially sweet, margin rose beds and grow under almond trees. Santolina and dusty miller gave the gray tones, stocks grew two and

three feet high. Carnations were here, calla lilies and cinerarias. The stone pines and cypress trees were the most dramatic of the trees and there were besides eucalyptus, acacias waving fluffy fragrant branches in the breeze, laurel, lauro-cerasus and ilex. Amongst the shrubs were the white and the yellow-flowered buddleias, daturas suspending lantern-like white or dark red flowers. Also bananas and hibiscus, hyacinths, narcissi, montbretias and quantities of freesias perfumed the air. Bitter orange trees were trained to form umbrellas and planted as accents, as are the orange trees in northern Italy.

The gardens were an undisciplined mass of bloom without any sense of form. They were a somewhat romantic interpretation of the Italian garden. They had terraces and some architectural features but these were secondary to the plants.

The gardens around Rome and up to Florence which I saw were very different from these southern gardens. But perhaps they can be described another time.



Drew Sherrard

Pentstemon Cardwellii



George C. Stephenson

Pentstemon fruiticosus, form at Rock Spur, Oswego, Oregon

A Review of Current Plant Literature

COMPILED BY CLARA J. WELD

In order to give the members of The American Horticultural Society a general view of what the several plant societies are doing for their respective members, a review of the literature has been prepared by Mrs. Weld which gives in the most compact form possible the important features of the publications of the several groups. No records have been made of the many features which concern only the members of the several groups, merely of those articles, that any gardener might wish to read were he hunting for current data in these fields.—Ed. (*Indicates illustration.)

YEARBOOK OF THE AMERICAN AMARYLLIS SOCIETY, ORLANDO, FLORIDA. HERBERTIA, Vol. 3, 1936

- Amaryllidaceae, An Introduction to the South African—R. A. Dyer. 3:37-40.
Amaryllidaceae known from Costa Rica, Bulbous—P. C. Standley. 3:74.
Notes on 10 species in 7 genera.
Amaryllidaceae native to the Union of South Africa. R. H. Compton. 3:67-9.
Lists 175 species in 19 genera.
Amaryllidaceae of British Guiana. E. B. Martyn. 3:71. Lists 22 species in 7 genera.
Amaryllidaceae of British Honduras, Bulbous—P. C. Standley. 3:77. Lists 4 species in 4 genera.
Amaryllidaceae of Ceylon. T. H. Parsons. 3:79. Lists 6 species in 2 genera.
Amaryllidaceae of Peru, Bulbous—J. F. McBride. 3:72-4. Brief notes on 64 species in 13 genera.
Amaryllidaceae of Texas. V. L. Cory. 3:78. Lists 25 species in 8 genera.
Amaryllidaceae of Venezuela, Bulbous—Dr. H. Pittier. 3:71. Lists 15 species in 6 genera.
Amaryllid Catalogue, Burbank—1909. W. Hayward. 3:112.
Amaryllid Pollen-gathering Insect. H. P. Traub. 3:111. A bee, *Halictus reticulatus*.
Amaryllid Propagation by terminal bud destruction. I. W. Heaton. 3:115.
Amaryllids, The Constitution of—W. Hayward. 3:110. Emphasizes breeding for vigor.
Amaryllids, Culture of—I. W. Heaton. 3:140-2. Cost of large scale production by Dutch bed method under shade in Florida. Table of soil, pH, shade and dormant period requirements for different genera.
Amaryllids Growth Responses following Stem Cuttage*—H. P. Traub. 3:115.
Amaryllids in North and Upper South, Hardiness and Landscape Value of—W. L. Hunt. 3:145-50.
Amaryllids of the Netherlands East Indies. 3:77. Lists 8 species in 5 genera.
Amaryllids in Pennsylvania. J. F. Ruckman. 3:137. Notes on culture and hardiness.

- Amaryllids, Notes on Vegetative Propagation of—I. W. Heaton. 3:117. Stem cuttage.
- Amaryllids, South African—Mrs. J. W. Coombs. 3:40. Notes by a traveller.
- Amaryllis as a Hobby. J. B. Pettit. 3:137.
- Amaryllis Exhibit.* 3:51, 52. U. S. Dept. of Agr. Show, 1936.
- Amaryllis Exhibit.* 3:45, 46. At third National Show at Orlando, Florida.
- Amaryllis (*Hippeastrum*) flower types, Classification of—3:86-90. Proposed groups, classes and score card for 1937-8 shows.
- Amaryllis soil determinations, A pH method for—Mrs. G. M. Bahrt. 3:124.
- Amaryllis, Storage of Pollen of Hybrid—N. E. Pfeiffer. 3:103.
- Amaryllis, Scheepers White Hybrid.* 3:35.
- Amaryllis, White, at Government House, Ottawa, Canada.* A. E. Challis. 3:43.
- Amerindian Lilies (*Hymenocallis*) in Florida. W. Hayward. 3:83.
- Atamasco Lilies.* 3:143.
- Bessera elegans. W. M. James. 3:125. Culture.
- Brodiaea capitata. W. M. James. 3:126. Culture.
- Color Charts. 3:58.
- Cooperanthes. S. P. Lancaster. 3:108. *Cooperia* X *Zephyranthes*.
- Cooperia Traubii*.* A new species from Texas. W. Hayward. 3:63-6.
- Crinum Culture in Missouri. A. G. Ulrich. 3:127. Notes on 24 species.
- Crinum—Mrs. James Hendry,* a Nehrling Hybrid. 3:79-80.
- Crinum—White Queen and Powell album. W. Hayward. 3:81.
- Cyrtanthus Balenii*.* 3:36.
- Cyrtanthus* and *Haemanthus* in Natal South Africa. Mrs. J. W. Archbell. 3:133.
- Cyrtanthus sanguineus*.* 3:134.
- Daffodil Notes. Miss M. McD. Beirne. 3:53. From Virginia.
- Daffodils in Kentucky. Mrs. W. L. Carter. 3:130.
- Daylilies and their Evaluation, The Horticultural Clones of—A. B. Stout. 3:99-103.
- Galanthus nivalis* (Snowdrops), Culture of—Miss M. E. Davis. 3:136.
- Garden Composts. 3:139. Suggests adding three-fourths of an ounce of superphosphate and the same amount of sulphate of potash to a bushel of potting soil for seedlings for best results.
- Hemerocallis—Lindo.* 3:93. A new Stout seedling.
- Hemerocallis (daylilies). Propagation of by crown cuttage.* H. P. Traub. 3:122-3.
- Hemerocallis—Wolof.* 3:94, 95. A new Stout seedling.
- Hippeastrum—Edelwiess.* 3:91. Pure white hybrid.
- Hippeastrum reticulatum striatifolium.* 3:96.
- Hippeastrum reticulatum-stylosum crosses, Inheritance in—S. P. Lancaster. 3:97.
- Hippocoris Garfieldii,* History of—R. T. Van Tress. 3:106. A cross between a *Hippeastrum* and *Lycoris aurea*.
- Helmberg, Eduardo L. A Tribute to—3:20.
- Hyline Worsleyi.* 3:61-3. Redescription.

- Hymenocallis Floridana.* 3:82.
 Hymenocallis flowers.* 3:147.
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 Hymenocallis quitoënsis.* 3:76.
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 Lycoris propagation, Simple incision method of—W. Hayward. 3:123.
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 Mead, Theodore L., In Memoriam. 3:20.
 Milla biflora. W. M. James. 3:125. Culture.
 Narcissi naturalized in an Ohio Woodland.* 3:144.
 Nerine filifolia. W. M. James. 3:135. Culture.
 Nerine sarniensis and Lycoris radiata. W. Hayward. 3:132. Nearly all bulbs of sarniensis in the trade are Lycoris radiata.
 Pamianthe peruviana.* 3:75, 77.
 Photographing flowers in natural colors. A. Wolfman. 3:55. Dufaycolor process.
 Pollen, A convenient dissicator for storing—H. P. Traub. 3:104. Storage in gelatin capsules over saturated salt solution at 35-8 per cent relative humidity and at 10 degrees C. gave best results.
 Polyanthus (N. Tazetta) and related Narcissi, The cultivated varieties of—G. W. Gibson. 3:98.
 Sternbergias.* 3:148.
 Zephyranthes atamasco and Treatiae in Northeastern Florida, Collecting—Mrs. W. E. MacArthur. 3:85.
 Zephyranthes in Florida. E. L. Brasol. 3:136.
 Zephyranthes rosea, Propagation by Under-and Over-feeding. Traub and Hughes. 3:118-21.
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 Worsley, Arthington, A Tribute to—Lord Aberconway. 3:9.

BULLETIN OF THE CHRYSANTHEMUM SOCIETY OF AMERICA

Vol. 4, No. 1 (Jan.); No. 2 (July); No. 3 (Oct.), 1936. Mimeographed.

Arno H. Nehrling, Sec'y and editor, Boston, Mass.

- Chemical Growth Substances, A Growers' Observations on some practical application of—C. M. Gibbs. 4 (1):19. Effect of various phytohormones in inducing root formation.
 Chrysanthemums Abroad. G. J. Ball. 4 (3):18-9. Pot plant popularity in Germany and England.
 Chrysanthemums, Forcing into early bloom—Alex Laurie. 4 (1):13. Practical suggestions on shading cloth, pinching dates, varieties, method of prolonging period of bloom.

- Chrysanthemums for Exhibition, Preparation of—Lloyd Truxal. 4 (3):20.
- Chrysanthemums in Oklahoma. F. J. Ruedel. 4 (2):15-8. Commercial experience outdoors and under glass in various parts of the state.
- Chrysanthemums, Shading—J. A. Beuerlein. 4 (1):15. Experience outdoors in a cloth house 99 x 400 feet to induce early flowering. Tabulated results with 37 varieties, singles and pompoms.
- Chrysanthemums, The Use of Additional Light in Growing—4 (2):19. Retarding effect of lengthened day on flowering.
- Cost Factors. G. J. Ball. 4 (1):18. In producing mum cuttings on large scale.
- Fumigation of Chrysanthemums with Liquid Fulex. R. E. Fuller. When used for red spider, thrips, midge and mites certain varieties of chrysanthemums are liable to be injured.
- Korean Hybrids under Glass. Alex Cumming, Jr. 4 (1):8. Varieties recommended are: Apollo, Vulcan, Orion, Saturn, Daphne, Louise Schling and the double Romany. When grown outside they will flower 7-10 days earlier.
- Membership List of The Chrysanthemum Society of America. 4 (2):21.
- Mutations or Sports.* Elmer D. Smith. 4 (1):10. Notes on 12 sports of Sarda which was a sport from Pink Dot.
- Shaded Mums under Cloth. Alex Laurie. 4 (3):16-7. Pompoms outdoors.

BULLETIN OF THE AMERICAN DAHLIA SOCIETY

Series XII, No. 75 (Feb.); No. 76 (May); No. 77 (Aug.); No. 78 (Dec.), 1936. Published quarterly by The American Dahlia Society, West Haven, Conn.

- Cockle-bur bill-bug (*Rhodobaenus tredecimpunctatus*) in dahlia stalks—C. A. Weigel. May, p. 25.
- Dahlias attain greater size in "cages"*—E. J. Mathews. May, p. 13-7. Plans for a cloth house, 33 ft. square, estimated to cost \$23.66.
- Dahlias in England, 1935. G. F. Drayson. Feb., p. 18.
- How to grow Dahlias. Capt. G. Crawshay. Aug., p. 28. A British radio talk.
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- Trial Grounds Report. 1936. Feb., p. 9-14 and 32-40. Descriptions of 28 varieties at Storrs and 20 at East Lansing which scored 85% or better.

Varieties, Photographs of.

Alice Stellick*.....Aug., p. 17	Joan*Dec., p. 22
Baby Francis*.....Dec., p. 11	Kentucky Sun*.....May, p. 23
Baerne*Feb., p. 15	Major C. C. Messervy* Feb., p. 18
Betty Lindgren*.....Dec., p. 18	Margrage*Dec., p. 25
California Rose*.....Feb., p. 11	Midwest Champion* Feb., p. 9
Chancellor*Feb., p. 16	O K*Dec., p. 23
Coral King*.....Feb., p. 17	Pride of Austinburg* Feb., p. 10
Fine (Mooi) Limburgh* Feb., p. 16 and Dec., p. 21	Rapture*Feb., p. 13
Hashrova*Dec., p. 9	Sarah Kay*.....Feb., p. 14
Helly Boudewijn* Dec., p. 23	Vlammenspel*Dec., p. 19
Ir Dinger*.....Dec., p. 20	
Jimmie Foxx*.....Dec., p. 7	

THE (YEAR) BOOK OF THE AMERICAN DELPHINIUM SOCIETY
FOR 1936. 78 pp. Wire-O-Binding.

- Australian Hints. F. M. Danks. p. 54.
- Blights, Rots and other Pests. Elizabeth M. Buffett. p. 69.
- Breeding Delphiniums. Agnes A. Wheeler. p. 61. At Portland, Ore.
- Breeding Red Delphiniums.* Frank Reinelt. p. 15. Hybrids produced from garden hybrids crossed with *D. cardinale* pollen gave rise to two groups of plants: (1) seedlings showing none of the *cardinale* parentage; (2) having the *cardinale* characteristic dominant in every way except in color.
- Breeding Red Delphiniums. A. A. Samuelson. p. 17. Results from crossing *D. hybridum* with *D. nudicaule* 1933-6.
- California Natives. Carl Purdy. p. 37. Notes on a dozen species.
- Canada, Some Notes from. E. Phillips. p. 50.
- Chromosome Study, A simple method for. L. H. L(eonian). p. 44. Technique for fixing and staining young anthers for determining the number of chromosomes.
- Delphiniums at the Museum of Modern Art (N. Y. City),* Exhibition of—p. 38-42.
- Delphiniums, Better—N. F. Vanderbilt. p. 23.
- Delphinium Comments.* N. F. Vanderbilt. p. 64-7.
- Delphinium Culture in Florida. Wyndham Hayward. p. 68.
- Delphinium: For Amateurs or Professionals? Lee Simomson. p. 26.
- Delphiniums for Exhibition, Growing—F. A. Bishop. p. 27. From British Delphinium Society's Yearbook, 1936.
- Delphinium, Karl Foerster's Strain of—Nikolaus Koech. p. 56. Progress in producing new varieties immune to mildew and rich in pure blue shades.
- Delphinium Research. R. C. Allen. p. 20.
- Delphinium Standards.* Edward Steichen. p. 8-11.
- Dried Delphiniums, On the Decorative Value of—Mrs. H. C. Quest. p. 56. The blossoms retain their color as well as any of the everlasting.

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- Forcing Perennial Delphiniums in the Greenhouse. Kenneth Post. p. 49.
Forcing to flower in winter met with little success. They can be made to bloom in March, April or May. Or the Chinese delphinium can be grown as an annual in greenhouse to bloom in April or May.
- Pallid Mite or Cyclamen Mite—a serious Delphinium Pest.* W. E. Blauvelt. p. 29-34. *Tarsonemus pallidus*, its life history, distribution, injury and control.
- Propagation by Cuttings. J. McConahey. p. 47.
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- Propagate Delphiniums by Cutting? Why not—E. D. Crowl. p. 46.
- Propagation Methods of Hybrid Delphiniums in Europe. Commercial—Max A. Nagler. p. 48.
- Seed and Soil Treatment with Chemicals to control Damping-off. E. F. Guba. p. 71. Reprint from a circular issued by Mass. State College.
- Species from Seed, A Few of the—Estelle Sharp. p. 11. Results with 5 kinds.
- Use of Lime, A Word of Warning on—R. C. Allen. p. 36. Too much produced a chlorosis.
- Visit to Bath (Eng.) and to the Nurseries of Blackmore & Langdon. Mrs. Livingston Farrand. p. 43.

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- Dittany. Righte.* H. A. Brown. 1935:23-7.
- Dittany redivivus.* Anne Burrage. 1936:58.
- Dyeing with Herbs. Frances T. Norton. 1936:29.
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No. 60 (February) ; No. 61 (March) ; No. 62 (June) ; No. 63 (October).

Awards of the American Iris Society for 1936. 63:62.

Awards, Record of Iris. Dykes memorial medal 1927-1933, Amer. Iris Soc.
1920-1934. 60:62.

Chromosome, Taming the—P. A. Loomis. 61:18. Experiences in raising
40,000 seedlings in Colorado.

Color. W. Timmerman. 62:3.

Eclador.* 62:23.

Index to Varieties described in Bulletins 49-60. L. M. Gage. 63:69-77.

Iris arenaria.* 62:44, 47.

Iris, A Gladiolus Fancier discovers the world of. R. Baerman. 62:18.

Iris Breeders, Rocky Mountain. S. R. Duffy. 61:38.

Irises—North and South. R. S. Sturtevant. 62:40.

Irises in Region Nine, The Most Popular. D. F. Hall. 63:56-61. (Kan.
Nebr., Mo., Ia., Ill.).

Iris Hoogiana.* 62:52, 53. (Regelia).

Iris hyacinthiana.* 62:49, 51.

Iris in Idaho. J. H. Christ. 61:8.

(Iris in) The High Rockies. H. H. Everett. 61:2.

Iris in Salt Lake City. H. F. Thorup. 61:27.

Iris korolkowi.* 62:45, 46.

Iris korolkowi atropurpurea.* 62:47, 48.

Iris korolkowi concolor.* 62:47, 50.

Iris laevigata X I. virginica.* 62:13.

Iris laevigata, Hybrids of with I. versicolor and I. virginica. 62:10.

Iris, List of grouped chronologically and by color. 62:32-4.

Iris Lorteti.* 62:2, 49 (Oncocyclus).

Iris missouriensis.* 61:3, 7, 15, 16.

Iris Notes, 1936. E. Salbach. 63:31.

Iris Notes of 1936. J. M. Shull. 63:46-55.

Iris Personalities. T. T. Hires. 63:18.

Iris Pilgrimage, 1936. B. C. Maples. 63:33.

Iris pseudacorus. 62:42.

Iris urmiensis X arenaria.* 62:43 (Regelio-cyclus hybrid).

Iris Species, Behavior of at 6000 feet above sea level. A. L. Kernochan.
61:11.

Iris Species at London, Canada, Some Experiences with. A. M. Ross. 62:26.

(Iris) Stars of the First Magnitude. E. G. Lapham. 63:28.

Iris Varieties, Concerning Older—J. C. Wister. 62:29.

Iris Varieties, Fewer and Better Ones. D. M. Andrews. 61:24.

- Kotaka-Yen, Horikiri, Japan, Preserved as a Famous Scene. G. M. Reed. 62:37.
- Lost Chord.* 62:60.
- Ratings of Tall Bearded Iris, 1936. 63:106.
- Records of Iris Pollenations. K. E. Steinmetz. 62:61-8. Valuable table for the breeder showing result of 200 attempts with 82 varieties in Knoxville, Tenn.
- Report of Judges, 1935. 60:67-80.
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- Building Up an Orchid Collection. J. M. Cox. 5:47. For the beginner.
- Cool House Orchids. Easily-grown. H. H. Warner. 5:36.
- Cypripedium Archie Niell var. of Actaeus.* 5:24.
- Cypripedium Chrysostom var. Stanley Baldwin.* 5:38.
- Cypripedium Fairrieanum.* J. A. Manda. 4:72.
- Cypripedium Harrisianum var. Superbum.* 5:7.
- Cypripedium Rothschildianum.* David Lumsden. 5:2-3.
- Dendrobium Dearei.* 5:15.
- Downs. Jere Arthur.* 4:62-3. In Memoriam. Portrait.
- Effect of Fog on Plant Growth. 4:77. Use of 2% ammonia and electric fans to absorb sulphuric acid present in fog in London.
- Epidendrum Hartii.* 5:12.
- Epidendrum radicans.* M. A. Purdom. 5:31. In its native home in Panama.
- Eulophiella Rolfei.* Mrs. P. S. duPont. 4:73.
- Forcing of some native Orchids. J. T. Curtis. 5:9.
- Germination of Orchid seeds. 5:38. Review of Hans Burgeff's Samenkeimung der Orchideen.
- Germination of Native Orchid Seeds.* J. T. Curtis. 5:42-7. Records success with eight species by non-symbiotic method, using a new nutrient solution (formula given) adjusted to a pH of 4.7.
- Grammatophyllum Fenzlianum.* J. A. Manda. 5:30 and cover.
- Laeliocattleya Grisette.* 5:30.
- Les Orchides (continued). Dr. Jean Gratiot (English revision by Dr. C. K. Schubert) 4:64-70; 5:4-7; 5:24-30; 5:52-5. Detailed directions for growing orchids, discussing temperature, shade, humidity, watering, pH, composts, unpotting, repotting, insect enemies, diseases and hybridization.
- Lycaste Skinneri var. alba Monja Blanca.* 5:58 and cover.
- Miltonia Bleuana.* David Lumsden. 5:22-3.
- New Potting Material for Epiphytic Orchids. G. W. Morey. 5:11. Glass wool.
- Orchids in Northern Queensland. W. McK. Robertson. 5:13-7 and 5:34-5. Describes visit to several collections.

- Orchid Wilt in Munich due to *Sclerotium Rolfsii*. 4:77 and 5:39.
Peristeria elata. 4:76.
Phalaenopsis Reve Rose.* 4:64.
Phalaenopsis Denevei* 4:66.
Platyclinis filiformis.* 5:3.
Rodriguezia Secunda.* T. A. Fennell. 5:55.
Schomburgkia Luedemannii. M. A. Purdom. 5:37.
Vanda caerulea var. Big Boy.* 5:27.
Vanda Sanderiana.* 5:4.

AMERICAN PEONY SOCIETY BULLETIN. 1936. Published quarterly by the American Peony Society, St. Paul, Minn.

No. 62 (January); No. 63 (March); No. 64 (June); No. 65 (September); No. 66 (December).

- Franklin Whites.* Mabel F. Christilaw. 66:4-13. Discussion of 10 of his originations.
 Mulches for Winter Protection. C. H. Connors. 62:13.
 My Visit to Toronto. G. W. Peyton. 64:16-25.
 One Hundred Peonies in Who's Who. A. B. Cady. 64:4. List of 100 highest rated.
 Peonies at Windy Hill in 1936 (Rapidan, Va.). G. W. Peyton. 65:3.
 Peonies for the South. J. E. Klein. 63:18.
 Peony—A. B. Franklin.* 66:8-9.
 Peony—Ball o' Cotton.* 66:4-5.
 Peony—Mrs. J. V. Edlund.* 65:10.
 Peony—Snowball.* 66:12-3.
 Rating of Peonies. On the—B. W. Guppy. 64:7. Gives scale of points.
 Rating Peonies. L. R. Sjulín. 65:18.
 Rating Seedling Peonies. Mrs. M. E. G. Freeborn. 65:15.
 Registrations. 62:32; 63:26; 64:70; 65:29.
 Report of 33rd Annual Exhibition at Toronto, Canada, 1936. 64:26-51.
 Seedling Peonies. Adventures in growing—B. W. Guppy. 66:16.
 Seedling Peonies. Growing. B. W. Guppy. 63:6. Development of the Japanese type.
 Seedling Peonies. Growing—B. W. Guppy. 62:4. For the beginner.
 Seedlings which Deteriorate. E. Auten, Jr. 62:3.
 Seedling Peonies. Growing. B. W. Guppy. 63:6. Development of the Japanese type.
 Tree Peonies in Michigan. Growing—N. I. W. Kriek. 65:12.
 Tree Peony is the "Aristocrat of the Garden." C. E. Hammersley. 65:9.
 Urbana (Ill.) Test Gardens. 62:25. Notes on 52 single and Japanese varieties.
 Varieties, Classified by Type. 62:8. Tables giving characteristics of 200 reliable, moderately priced varieties from Cornell Extension Bulletin No. 321.

AMERICAN ROCK GARDEN SOCIETY

GARDENERS' CHRONICLE OF AMERICA. Vol. 40, Nos. 1-12,
Jan.-Dec., 1936

- Actinea herbacea. pp. 332, 339.
Aerial gardens. Cecile H. Matschat. 254.
Alchemilla alpina. 62.
Allium cyaneum. 59.
Alpine Pines of Western America, Else M. Frye. 241.
Alpine St. Johns-worts. 60.
Alpines in Virginia, Experiments with. Orlando E. White. 87.
Alpines, Native America. Ira N. Gabrielson. 167.
Alpines, Noteworthy. C. R. Worth. 231.
Alyssum (Schivereckia) borumuelleri. 332.
Androsace sarmentosa watkinsi.* 297.
Anemonella thalictroides. 127.
Aplectrum hyemale.* 304.
Aquilegia ecalcarata. 218.
Aquilegia flabellata nana.* 207.
Aquilegia Jonesi.* 297, 218.
Aquilegia, Some Dwarf. 160.
Arabis procurrens. 93.
Ardisia crenulata.* 348.
Arrangements after the Frosts. Dorothy Blom. 289.
Asarum europaeum, 340.
Artemesia frigida.* 313.
Asparagus. W. B. Nissley. 296.
Aster Burbank's Charming.* 121.
Aster Mt. Everest.* 121.
Asters. Ray M. Koon. 121.
Aster Silver Spray.* 121.
Aster Snow Sprite.* 122.
Asters. E. S. Henderson. 257.
Azalea balsaminaeflora.* 116.
Azalea Kaempferi.* 116.
Azalea macrantha.* 117.
Azalea mucronulata.* 118.
Azaleas for Spring Glory. P. F. Frese. 116.
Bedding Plants. R. M. Crocket. 105.
Begonia Margaret E. Ham. 202.
Begonias, A. Collection of. Walter Wollny. 7.
Begonias for Outdoor Beds. J. L. Ham. 299.
Building up the Soil. E. Beckett. 283.
Bulbs in the Rock Garden. J. A. Grant. 351.
Campanula dichotoma;* C. Loefflingi;* C. strigosa;* C. sulphurea.* 169.
Campanula divaricata. 62.
Campanula Portenschlagiana;* C. Rainerii.* 218.
Campanulas, Annual. R. M. Senior. 169.
Campanula scabrella.* 93.
Carnation Culture. Alex Handling. 356.
Carpinus caroliniana.* 321.
Cattleyas, The. Jack Lee. 23.
Ceanothus, velutinus.* 324.
Chelsea (London) Flower Show. R. E. Arnold. 195.
Choice Plants for the Small Garden. C. W. Barr. 223.
Chrysanthemum myconis. 363.
Chrysanthemum Time. Arno H. Nehrling. 285.
Chrysanthemums, Black Cloth Treatment to induce early flowering. 15, 143.
Chrysanthemums (varieties or hardy). 80.
Christmas Window-garden. Bessie R. Buxton. 347.
Cistus Doris Hibberson;* C. maculatus.* 201.
Color in Dahlias. C. L. Alling. 5.
Columbines, Rock Garden. Don Richardson. 207.
Composition of Shrubbery Groups. C. W. Barr. 47.
Conophytum mundum.* 259.

- Cornus Kousa.* 322.
 Cotoneasters? Why not plant. V. H. Ries. 263.
 Crassula rubicunda.* 113.
 Cuthbertia graminea. 247.
 Cut Worms. 75.
 Cyclamen europaeum. 217.
 Cyclamen repandum;* C. neapolitanum.* 305, 218.
 Dahlia Insect Pests. Theo. L. Bissell. 233.
 Dahlias, Color in. C. L. Alling. 5.
 Dahlias on Trial. C. E. Wilder. 264.
 Daturas in California. Lester Rowntree. 301.
 Datura suaveolens.* 301.
 Delphiniums for American Gardens, Better. R. G. Waring. 148.
 Delphiniums, Forcing. Foster Holmes. 340.
 Dianthus alpinus.* 156, 184.
 Dianthus callizonus;* D. neglectus.* 184.
 Dianthus Delight.* 183.
 Dianthus Peristeri; D. rumelicus. 363.
 Dicentra eximia.* 324.
 Diseases of Shade Trees. R. P. White. 81.
 Douglasia Vitaliana. 291.
 Draba Haynaldi. 93.
 Dutch Elm Disease. Dr. R. P. White. 323.
 Echinocereus Riechenbachii.* 114.
 Electricity a Stimulus to Plant Growth. 237.
 Erysimum podocarpum. 362.
 Erythroniums, Enchanting. Claire Norton. 111.
 Euphorbia obesa.* 259.
 Euphorbia splendens.* 347.
 Feeding of Plants. Edwin Beckett. 139.
 Flower Diseases and their Control. Harry Wood. 171.
 Flowers in a Vase. Dorothea Blom. 203.
 Flowers of Florida. Amelia L. Hill. 53.
 Flowers on the Table. Dorothea Blom. 225.
 Forcing Bulbs. J. G. Esson. 261.
 Foxgloves. Dorothea H. Jenkins. 172.
 Friendly Herbs. A. B. Carter. 104.
 Fuchsia magellanica gracilis;* F. triphylla.* 198.
 Fuchsia procumbens.* 197.
 Fuchsia, Species. Lester Rowntree. 197.
 Gamelopsis Tagetes.* 45.
 Garden Equipment. Alfred Putz. 40.
 Gardens of the Pahasapa (in Black Hills, S. Dak.). C. A. Barr. 313, 357.
 Gentiana latifolia. 334.
 Gentiana septemfida.* 253.
 Gentiana sino-ornata X Farreri. 272.
 Gentians in the East. Don Richardson. 253.
 Gladiolus, Growing for Exhibition. Homer F. de Groot. 224.
 Gladiolus, Twenty-five most popular. 99.
 (Gourds) Fruits or Creatures? Barbara C. Aplin. 354.
 Grammatophyllum Fenzlianum.* (First Flowering in U. S.) 329.
 Grouping the Natives. F. L. Witt. 71 (Ecology applied to landscaping).
 Hardy Woody Plants. George Graves. 6, 184, 140, 170, 211, 260, 287, 327, 356.
 Hedge Plants. C. W. Barr. 349.
 Hedges. Dorothy H. Jenkins. 141.
 Heleniums. 257.
 Helianthemum Ben Nevis;* H. Jock Jest.* 201.
 Heloniopsis japonica.* 272.
 Holly for American Gardens. Culture—Earle Dilatash. 341.
 Propagation by cuttings—O. A. Quensé. 341.
 Holodiscus discolor.* 317.
 Houstonia ciliolata; H. caerulea; H. serpyllifolia. 363.
 Houstonia tenuifolia. 62.

- Hoya carnos** 113.
Hypericum empetrifolium; *H. coris*;
H. olympicum; *H. polyphyllum*; *H.*
reptans; *H. anagaloides*; *H. balea-*
ricum. 60.
 Influence of Plant and Foliage Char-
 acter. C. W. Barr. 3.
 In the Woodland Garden. J. Birken-
 tall. 284.
Ionopsidium acaule. 160.
 Iris, A Hobby for Men. J. B. Wal-
 lace, Jr. 137.
*Iris reticulata** 58.
*Jankaia Heldreicki** 297.
*Kalanchoë Fedschenkoi**; *K. Aliciae**
 345.
Kalanchoës. Lester Rowntree. 345.
 Lawn Care. C. K. Hallowell. 103.
*Lewisia Howelli** 267.
Lewisias, The Northerly. J. W.
 Winson. 37.
 Lilacs. Alex Michie. 145.
Lilium cernuum. 363.
*Lilium formosanum** 293.
*Lilium giganteum himalaicum** 334.
*Lilium testaceum** 294.
 Lilies, Hardy Garden. Wm. N. Craig.
 292.
Linaria hepaticaefolia. 340.
*Lycoris radiata** 176.
*Malpighia coccigera** 21.
*Mesembryanthemum roseum** 113.
 Modern Glass Houses. D. H. Rees.
 208.
 Moraine Garden. V. H. Ries. 135.
Narcissus cyclamineus. 351.
 Natives of the Pacific Coast. (Shrubs.)
 Ira N. Gabrielson. 317.
*Nerine sarniensis** 175.
 Newcomers from Nippon (for rock
 garden). Else M. Frye. 51.
*Nierembergia gracilis** 363.
 Novelty Parade, 1936. 16.
Ononis cenisia; *O. hircina*; *O. fruti-*
cosa. 332.
 Orchids on Show. J. F. Piper. 77.
*Ornithogalum nutans** 304, 305.
*Oxalis adenophylla** 351.
 Packing of Blooming Rock and Alpine
 Plants. J. E. Mitchell. 127.
 Pansy To-day. August Ihm. 196.
Pentstemon grandiflorus. 158.
 Peonies. W. F. Christman. 228.
 Peony Argosy;* *P. Ecstasy** 228.
 Perennials, Blue Midsummer. R. M.
 Crocket. 319, 353.
 Perennials, Midsummer. R. M.
 Crocket. 205.
 Perennials, Noteworthy. J. Birken-
 tall. 174.
 Perennials. Pink and Red Midsum-
 mer. R. M. Crocket. 240.
 Perennials. Yellow Midsummer. R.
 M. Crocket. 269, 295.
*Phlox adsurgens** 267.
*Phlox alyssifolia** 313.
Phlox caespitosa; *P. stolonifera*. 217.
Phlox Hoodii. 314.
Phlox, Dependable (Perennial). L. B.
 Birdsall. 173.
Physaria didymocarpa. 362.
*Phyteuma comosum** 246.
*Pieris japonica** 115.
 Pinks, Hardy. Don Richardson. 183.
 See also 216, 246.
*Pinus contorta**; *P. monophylla*. 241.
 Plant Records, A System of. George
 Graves. 230.
 Plants for the Home Conservatory.
 Frank K. Balthis. 11.
 Plants for Large Plantations. C. W.
 Barr. 251.
 Plants for long Period of Bloom in
 the Rock Garden. Eliz. S. Rawlin-
 son. 9.
 Pool Plants. Dorothy H. Jenkins,
 199.
 Poppies, Perennial. Dorothy H. Jen-
 kins. 227.
*Primula floribunda**; *P. kewensis**;
*P. sinensis** 179.
*Primula Parryi** 58.
*Primula Winteri** 126.
 Primulas. 29.
 Primulas. T. H. Everett. 179.
 Primulas, Native (American). 247.

- Propagating Ericaceous Plants. Geo. Graves. 43.
- Pruning, Summer. Montague Free. 200.
- Putting the Garden to Sleep. E. Beckett. 315.
- Ranunculus glacialis*. 217.
- Rhododendrons (for rock garden). 332.
- Rhododendrons, Propagation of. S. Bowler. 320.
- Rhodotypos tetrapetala*.* 141.
- Rochea coccinea* (in native habitat). 291.
- Rock Garden Jewels. Mabel C. Burlingham. 297.
- Rock Plants, Uncommon. V. H. Ries. 339.
- Rock-roses and Sun-roses. John A. Grant. 201.
- Room without a Ceiling. C. W. Barr. 177.
- Rosa Rouletti*.* 188.
- Roses, To-day's. R. M. Hatton. 82.
- Salvia Greggii*. 94.
- Salvia Jurisci*. 94, 362.
- Saponaria Pumilio*.* 305.
- Scabiosa*. Frances Hannay. 136.
- Scilla sinensis*. 272.
- Sedum Nevii*. 340.
- Sedum pusillum*.* 216.
- Sedum ternatum*. 362.
- Seed Bed Preparation and Fertilization. W. B. Nissley. 86.
- Shrubs, Common Diseases of. R. P. White. 107.
- Shrubs, Familiar. E. S. Henderson. 343.
- Shrubs. White-flowering, pink and red, yellow, lavender and blue. R. M. Crockett. 181.
- Silene rotundifolia*. 339.
- Slope in the Garden, The. A. C. Pfander. 325.
- Soils and their Composition. J. MacCartney. 312.
- Sonerilas*. 45.
- Spring Beauty and Fall Splendor. Else M. Frye. 115.
- Spring Bulbs for American Gardens. J. G. Esson. 69.
- Staging Flower Shows. V. H. Ries. 234.
- Start the Garden Early. R. M. Crockett. 39.
- Stapelia hirsuta*.* 113.
- Statuary Settings. C. W. Barr. 109.
- Sternbergia lutea*.* 21, 332.
- Stewartias* in the North. Donald Wyman. 262.
- Stewartia koreana*.* 262.
- Strawberry Varieties. 70.
- Styrax japonica*.* 321.
- Succulents and Cacti. Ladismith Cutak. 113.
- Sweet Peas. George H. Gillies. 35.
- Talinum calcinum*. 340.
- Tea (history of cultivation). T. R. Ashlee. 36.
- Texas Plants for Southern Gardens. Kathleen Cowgill. 266.
- Tipularia unifolia*. 304.
- Transmutation of Lilies to *Gladiolus*. Roscoe Huff. 67.
- Trees worthy of Attention. C. W. Barr. 321.
- Trillium Vaseyi*. 272.
- Tulipa persica*. 351.
- Tunica saxifraga flore-pleno*. 334.
- Viola Govi*. 30.
- Viola pedata*.* 267.
- Viola rugulosa*. 159.
- Viola striata*. 92.
- Viola Vilmoriniana*. 158.
- Wall Gardening. F. C. Morgan. 79.
- Water Lilies. George H. Pring. 48.
- What is a Hybrid? Edith H. English. 4.
- Whys of Plant Culture, The. C. J. Hudson, Jr. 311.
- Woodsia oregana*.* 313.
- Zelkova serrata*.* 322.

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- Anne Mette Poulsen.* P. (S. Poulsen, 1935). U. S. Plant Patent applied for. Colored plate opp. p. 216 and p. 236.
- Artificial Defoliation of Field-grown Rose Plants. Preliminary Report. Boyd and Taubenhaus. p. 130. Acidified sprays of copper sulphate or iron sulphate give encouraging results.
- Barron, Leonard.* President, The American Rose Society. Portrait. opp. p. 12.
- Black-spot Experience, A Bothersome—H. R. Rosen. p. 121-6. Report of a severe epidemic in Ark. in 1935.
- Bonnie Jean.* HT. opp. p. 156.
- Caress.* HT. opp. p. 157.
- Carillon.* HT. (J. H. Nicholas, 1935), U. S. Plant Patent No. 136. opp. p. 13 and p. 176, 223.
- China and Bengal Roses, A Plea for old—W. Stout. p. 79.
- Colonel Campbell Watson.* HT. opp. p. 156 and p. 161.
- Coddington,* L. B. of Murray Hill, N. J. Originator of the rose President Herbert Hoover. Portrait. opp. p. 172.
- Crimson Glory.* HT. (W. Kordes Sons, 1935). U. S. Plant Patent No. 105. Colored plate opp. p. 201 and p. 183.
- Dickerson's Centennial.* HT. (A. Dickerson & Sons, 1935). opp. p. 69 and p. 226.
- Diplosis Die-Back of Roses, A Preliminary Report on—Taubenhaus and Boyd. p. 127.
- Disease-Control Campaign, The 1935—L. M. Massey. p. 110-6. Tabulated results from 64 contributors.
- Eclipse.* HT. (J. H. Nicholas, 1935). U. S. Plant Patent No. 172. Colored frontispiece and p. 185
- Ecstasy.* HT. opp. p. 157.
- Exhibition Blooms, How to grow—P. G. Enser. p. 65.
- Exhibition Roses—Classifying, Exhibiting, and Judging. G. F. Middleton. p. 59.
- Feed your Roses. J. B. Carson. p. 91. Gives analysis of common fertilizer materials.
- Fred Walker.* Ht. (S. McGredy & Son, 1935). opp. p. 117 and p. 226, 189.
- Gloriana.* HT. (Hillock, 1936). opp. p. 108 and p. 224.
- Growing Roses under Cheesecloth. J. H. Nicholas. p. 107.
- Hardy Roses, More about—F. L. Skinner p. 39. Three new hardy *rugosa* hybrids originating at Dropmore, Manitoba.
- Hinrich Gaede.* HT. (W. Kordes Sons, 1931) opp. p. 61 and 191.
- How the Plant Patent Act is Operating. O. M. Kile. p. 134. Up to Dec., 1935, 69 of the 159 plant patents are roses.
- How the United States grows its Roses. p. 49-56. Summarized information from an inquiry sent out to 22 large commercial growers in 1935.
- Hybrids of the circumpolar rose (*R. acicularis*). P. W. Wright. p. 41. Crosses with the *rugosa* variety Hansa in 1932 in Saskatchewan give promise of a new range of hardiness.

- Kathleen Mills.* HT. opp. p. 156.
- Lady Frost.* HT. opp. p. 157 and p. 163.
- Lawranceana or the "Fairy Rose."* C. Page. p. 70. No doubt that Rouletti is one of the Lawranceana roses (*R. chinensis minima*).
- McGredy's Pink.* HT. opp. p. 157 and p. 198.
- McGredy's Triumph.* HT. (McGredy & Son, 1934). opp. p. 60 and p. 198.
- Matador.* HT. (van Rossem, 1935), U. S. Plant Patent No. 170. Colored plate opp. p. 232 and p. 197.
- New Roses of all the World. p. 221-36. During 1935, 204 new varieties were reported making 2,754.
- New Roses of 1935 in England. C. Page. p. 161.
- 100 per cent Thornless Roses. N. E. Hansen. p. 43. Progress in breeding hardy thornless roses for the prairie Northwest.
- Outdoor Rose Breeding in Illinois. S. L. Wiseman. p. 89. Lists several good seed parents; gives method of storing pips in winter.
- Portland Wants a New Rose. p. 23. Specifications for the Thousand-dollar contest.
- President Boone.* HT. opp. p. 41 and p. 170, 207.
- Proof of the Pudding, 1936. (Editorial) p. 171-220. Reports from 80 listed members on 210 varieties of roses introduced in the last five years.
- Pruning—High or Low? Mrs. H. R. Foote. p. 71.
- Quality in Roses? What about—R. M. Hatton. p. 45. Gives grading standards for rose nursery stock as established by the American Association of Nurserymen.
- Reblooming Roses and Sunshine.* W. D. and J. D. Brownell. p. 81. Full sunshine is essential to bring out extreme intensity of reblooming habit in hardy climbers. Notes on some new types of roses with hardiness, reblooming and prostrate habit.
- Red Copper Oxide as a Rose-spray. J. G. Horsfall. p. 117. Adhesive, almost invisible, easy to use, cheap but burns foliage of many varieties.
- Reinisch Rose and Rose Test Gardens in Topeka. H. Richardson. p. 29.
- Rex Anderson.* HT. opp. p. 156 and p. 162.
- Rochfort.* HT. (C. Mallerin, 1935). opp. p. 116 and p. 229, 209.
- Rosa microphylla.* opp. p. 20.
- Rosa Rouletti—Tom Thumb.* J. H. McFarland. p. 68 and colored plate opp. p. 72. Has clean crimson flowers instead of light pink.
- Rosarium with adequate regional Trial-ground Service, A National—p. 11-4.
- Rose and its Affairs in Europe, The—J. A. Gamble. p. 142-58. Report of a trip in 1935 to famous European rose gardens.
- Roses patented in the United States to Jan. 21, 1936. p. 27. With details for nos. 129-163.
- Rose-garden, The Great Porterfield*—J. D. Crump. p. 33. 10,000 plants of over 500 varieties. Seven miles south of Macon, Ga.
- Rose-garden of Jere A. Downs, Winchester, Mass.* opp. p. 173.
- Rose-garden of N. H. Noyes, Indianapolis, Ind. opp. p. 180.
- Rose-Test Garden at Portland, Oregon,* The International—Q. L. Matthews. p. 25.

- Rose-growing, One Requisite of successful—H. L. Daunoy. p. 85-8. Recommends use of soil-test kits to show hydrogen-ion concentration. Roses do best in soils whose pH values range from 6.0-6.5.
- Rose-Pruning Demonstrations in Australia. T. A. Stewart. Public demonstrations take place in June and July when rose plants are most completely dormant.
- Sam McGredy.* HT. opp. p. 156 and p. 161.
- Shipping Roses for Pictures. E. O. Harmon. p. 140.
- Sir Henry Seagrave* HT. (A. Dickson & Sons, 1932). opp. p. 80 and p. 212.
- Snowbank.* P. (J. H. Nicholas, 1936). opp. p. 149.
- Souv. de Jean Soupert.* HT. (Soupert & Notting, 1929). Colored plate opp. p. 89 and p. 214.
- Sterling.* HT. (E. G. Hill Co., 1933). opp. p. 109 and 215.
- Stevens, Glendon A. In Memoriam. p. 10, 132.
- Sub-irrigation for rose-beds. J. H. Nicholas. p. 108.
- Sulliger, Spencer S. In Memoriam. p. 10.
- Susan Louise.* H. Gig. (C. E. Adams, 1929). opp. p. 181 and p. 216.
- Sweetness.* HT. opp. p. 157 and p. 161.
- Texas Centennial.* HT. (Dixie Rose Nursery, 1935). U. S. Plant Patent No. 162. Colored plate opp. p. 48 and p. 225 and 217.
- Texas Gold.* HT. (Wolfe, 1935). U. S. Patent No. 135. Colored plate opp. p. 188 and p. 217.
- Texas Roses, A Texan looks at—W. S. Hanley. p. 57. Describes the rose nurseries about Tyler, Texas, and its annual Rose Festival.
- Up-to-date Understocks in Australia.* H. H. Hazelwood. p. 165. With portrait of author.
- Victoria Harrington.* HT. (G. C. Thomas, Jr., 1931). Colored plate opp. p. 104 and p. 219.
- What Greater Delight? Mrs. F. L. Keays. p. 15-22. Author of "Old Roses" describes pleasure gained by visiting old gardens in search of old-fashioned roses.
- What *Is* a "Plant Patent"? J. H. McFarland. p. 137.

THE CACTUS AND SUCCULENT SOCIETY OF AMERICA.

CACTUS AND SUCCULENT JOURNAL. Vol. 7, Nos. 7-12, Jan.-June, 1936, and Vol. 8, Nos. 1-6, July-Dec., 1936. Each number contains 8 pages (67-148) of Vol. 2 of *The Cactaceae* by Britton and Rose not here indexed.

- Acanthocereus pentagonus*.* 8:14.
- Aloe aristata*.* 8:25.
- Aloe*, Notes on (in South Africa). J. M. Van Den Houten. 7:103.
- Astrophytum capricornis* var. *minor*.* 8:96.
- Australia, Growing Succulents in. R. W. Fields. 8:91.
- Cactaceae of California. S. B. Parish. (Review). 8:93.
- Cacti listed in accordance with their geographical origin. Anne Smith. Texas. 8:22, 45, 62.

- Cactus and Succulent Society of America, Inc. Constitution and By-laws. 7:118.
- Cactus Collecting in Manaña Land (Lower Calif.). Yale Dawson. 7:115, 139.
- Cactus Collecting Expedition in South America (Argentina and S. Bolivia). H. Blossfeld. 7:147.
- Cactus Culture in Puerto Rico. G. F. Anton. 8:92.
- Cactus intortus.* 7:113.
- Cactus Seedlings are easy to Grow. R. W. Kelly. 7:125.
- Caralluma caudata.* (First known flowering in U. S.). 7:97, 104.
- Cereus jusberti.* (a hybrid). 8:31.
- Cochemiea halei.* 7:145.
- Cochemiea setispina.* (Collecting in Lower Calif.). George Lindsay. 7:108.
- Collecting Succulents in Mexico. Eric Walther. 7:137, 166, 182 and 8: 18, 70.
- Corynephyllus viride.* 8:72.
- Crassula falcata.* 8:14, 26.
- Crassula trachysantha.* 8:26.
- Cremnophila nutans.* 8:87.
- Desert Lilies (Yuccas). E. M. Baxter and H. E. Gates. 7:179.
- Echeveria cuspidata*; E. crenulata.* 7:138.
- Echeveria gibbiflora*; E. glauca.* 7:167.
- Echeveria linguaefolia.* 8:87.
- Echeveria racemosa.* 8:71.
- Echeveria, Phylogeny of. Eric Walter. 8:82-8. A valuable discussion of his diagram of the relationships of the various subfamilies and genera of Crassulaceae with many figures of types of inflorescence.
- Echeveria subrigida.* 8:19.
- Echinocactus ingens.* 8:30.
- Echinocereus angusticeps,* a new species from the Lower Rio Grande Valley, Texas. Elzda U. Clover. 7:174.
- Echinocereus Ledingii,* n. sp. (from Arizona). R. H. Peebles. 8:35.
- Echinocereus papillosus.* 7:174.
- Echinocereus stramineus.* 8:38.
- Echinocereus longispinus.* n. sp. (from Okla.). M. S. Lahman. 7:135.
- Echinocereus viridiflorus.* 7:105.
- Echinocereus, (Proposed) Revision of the genus. E. U. Clover. 8:93.
- Euphorbia canariensis* and E. dinteri.* 8:81.
- Euphorbia inermis,* ledienii,* mammillaris,* mauritanica.* 8:68.
- Euphorbia lactea,* Stem Rot of (from Jour. N. Y. Bot. Garden, Vol. 37). 8:41.
- Euphorbia squarrosa. 8:15.
- Experiences of an Amateur (in growing succulents in E. Mass.). Mrs. Lulie G. Smith. 8:76.
- Faucaria tigrina.* 8: 26.
- Ferocactus covillei*; F. horridus*; F. wislizenii.* 7:190.
- From Prickly Giants to Downy Midgets (Cacti in Trans-Pecos area of Texas). E. R. Bogusch. 8:38.
- Gastrolea sculptilis* (hybrid of horticultural origin). 7:136.

- Glossary of Succulent Terms. Wm. Taylor Marshall. 7:156, 169, 186 and 8:27.
- Glottiphyllum linguliforme.* 8:30.
- Grafts, A Beginner's. C. W. Armstrong. 7:122.
- Growing Instructions (for succulents). Albert Krejci. 8:21.
- Graptopetalum bartrami.* 7:126.
- Haworthia attenuata.* 8:26.
- Hesperoyucca whipplei.* (in color). 7:177.
- Huernia whitesloaneana.* n. sp. (from Transvaal). Dr. G. C. Nel. 8:1, 9.
- Huntington Botanical Gardens. 8:34.
- Hybrid in the Genus Opuntia, A Natural (Opuntia spinosior X fulgida). R. H. Peebles. 7:99.
- Kleinia stapeliaeformis.* 8:25.
- Mammillaria. Dr. R. T. Craig. 8:59.
- Mammillaria fischeri*; M. dietrichae; M. tiegeliana.* 8:31.
- Mammillaria weingartiana.* 8:60.
- Mesembryanthemum roseum.* 8:33.
- Mesembryanthemums. See Winter also.
- Missouri Botanical Garden. Ladismith Cutak. 8:54.
- My Fifth South American Expedition. Curt Bacheberg. 8:73.
- Neobesseya notesteini. Mrs. Neff Bakkers. 7:181.
- Neomammillaria blossfeldiana; N. campotricha.* 8:31.
- Neomammillaria dawsonii.* 8:61.
- Neomammillaria microcarpa,* Variations of. Wright Pierce. 7:164.
- Neowerdermannia chilensis Beckbg. n. sp. from Chile. 8:73.
- Notes on Oklahoma Cacti. Marion S. Lahman. 7:105, 135, 185.
- Opuntia engelmannii,* A red-flowered. R. S. Woods. 8:94.
- Opuntia leptocaulis.* Jack Whitehead. 8:51.
- Opuntia whipplei.* 7:185.
- Perisolobus Bijleae.* 8:43.
- Photos of Succulent Arrangements (in shows, in gardens). 8:3-7, 11-13.
- Phyllocactus, A Yellow (Epiphyllum cooperi hybrid). Clarian Steele. 8:79.
- Portulacaria afra.* 8:69.
- Rhombophyllum rhomboideum.* 8:26.
- Sclerocactus poliancistrus. 8:31.
- Sedum treleasii.* 8:87.
- Selenicereus macdonaldiae.* 8:58.
- Selenicereus pteranthus.* 8:57.
- Selenicereus vagans.* 8:17.
- Selenicereus wercklei.* 8:49.
- Some of the little Treasures of the Veldt. J. Hurlong (Little Karoo, S. W. Cape Colony). 8:36.
- Some Succulents of the Port Elizabeth (South Africa) District. F. R. Long. 8:67.
- Specialization (on species of Selenicereus). Wm. T. Marshall. 8:57.
- Succulents in a South African Garden. Sarah V. Coombs. 7:133.
- Study of Succulents. Dr. A. D. Houghton. IV, A typical plant description, 7:110; V, The plant and its function, 7:123.

Species, The hasty naming of. Wright Pierce. 7:164.

Toumeyia papyracantha Eng. rediscovered (near Santa Fe, N. M.). Cleve Hallenbeck. 7:131 and 8:10.

Tricocereus huasha.* 8:15.

Tricocereus pasacana.* 7:177.

West Coast (of Sonora) Ferocacti. Dr. W. E. Lowry, Sr. 7:189.

West Indian Ecological Expedition. W. T. Marshall. 8:90.

Winter Also. Dr. R. W. Pointdexter (on *Mesembryanthemums*). 8:43.

*Yucca baccata**; *Y. mojavensis** 7:180.

Yucca valida.* 8:30.

THE INTERNATIONAL GOURD SOCIETY. GOURD BULLETIN.

Vol. 3, No. 2 (no date). Published semi-annually.

Third Annual Gourd Festival (at North Hollywood, Calif., Oct. 11-13, 1935).*

Dorothy L. Black. p. 1.

Gourds as a Hobby. H. R. Lookabill. p. 6.



George C. Stephenson

Pentstemon Menziesii and *P. Menziesii Davidsonii* (on right)

A Book or Two

An Artist's Herbal. By Louise Mansfield. The Macmillan Company, New York, 1937. 76 pages, every other one an illustration. \$2.50.

After a pleasant introduction by Mrs. Fox in whose gardens Miss Mansfield made these exquisite drawings of herbs, there are alternate pages of text and illustrations. The drawings were in pencil and even in reproduction show a remarkable diversity of coloring from the chaste grays of the Damask rose to the velvety blacks of the Sweet Flag. Nearly everyone shows root, shoot and flower. Some are drawings that stand by themselves, some are fortified by ingenious treatments of the background which by line or tint bring out the plant portrayed.

The texts are slight but one really does not mind at all.

Modernistic Flower Arrangement. By Barbara Sagel Meisse. The Orange Judd Publishing Co., New York, 1937. 160 pages, illustrated. \$2.00.

After a preliminary and intriguing chapter, this book falls into familiar chapters headed, Plant Materials, Containers, Form, Color, Composition, Table Decoration, Christmas Arrangements, Descriptions of Various Flower Pieces.

One wishes that the author had given her meaning of the word modernistic. This reviewer does not find it but gathers from the text that the word is used only to imply contemporary or of the moment, since the illustrations given for the most part have their rise in the old styles and are modified very intelligently by present day practices. There are no imi-

tations of Dutch flower pieces or Japanese arrangements but examples that derive from each. There is nothing in the mode suggested by modernistic that implies the use of plants as if they were non-living objects, nothing stylized, nothing architecturally formed.

The discussion is simple, clearly worded, provocative of thought. The analytical discussion of the arrangements at the back of the volume is valuable but not always altogether convincing. Some of the arrangements are quite charming and some for this eye quite dreadful.

A Handbook of Conservation. Published by the Society for the Preservation of the Landscape Features of Essex County, Massachusetts and The Peabody Museum, Salem, Massachusetts. 84 pages illustrated. It may be ordered from Mrs. Gordon Abbott, Sec'y, Box 200, Manchester, Mass. \$1.50.

First of all let it be said that this is a splendid book with fine paper, beautiful typography and distinguished illustrations. Its messages are naturally local, but their underlying theme is applicable almost anywhere. It is written by various persons, each concerned with one phase of the theme.

The book is divided into three parts, The Need for Conservation, Agencies for Conservation, Conservation in Practice. The implications are both social and economic; the results are vital. Any person who is concerned with the preservation of the natural character and beauty of his region and has an intelligent understanding of all that land planning involves will read it with profit.

Roadsides. By J. M. Bennett. The Stratford Company, Boston, Mass. 1937. 233 pages, illustrated. \$3.00.

Mr. Bennett approaches his discussion from the point of view of one who has been responsible for roadside planting and who has not only his own experience but that of his colleagues upon which to draw. His book represents the best opinions in regard to roadside planting for our modern highways. His fellow practitioners will read it with interest, the motoring public to whom it is addressed, should read it with even more interest while amateurs who need data and arguments with which to stir up interest in such projects will find it invaluable.

The Garden of Gourds. By L. H. Bailey. The Macmillan Company, New York, 1937. 134 pages, illustrated, \$2.50.

One resents having to say that this is a timely book but so it is. Professor Bailey has long been interested in Cucurbits so it is no surprise to find him writing of gourds. The text, as one would expect, finds that happy middle ground in which the niceties of scientific work have been tempered by the literary powers of the writer. All is clear and orderly; all is interesting and engaging.

The frontispiece is in color and is nice enough but in the opinion of this reviewer is quite put to shame by the many black and white illustrations which are not only decorative in the extreme, but have a splendid relation to the printed pages. One would like to do more than record this pleasure from these unnamed artists, said to be students. Surely the plate on page 7 or that on page 57 might stand in any company.

The Plant Doctor. By Cynthia Westcott. The Frederick A. Stokes Company, New York, 1937. 228 pages, illustrated. \$2.00.

This is a simply written handbook intended for the amateur gardener who must inevitably discover various insects and various fungus diseases in his gardening.

The book is planned on a monthly calendar basis with a brief weekly schedule for each month that is elaborated in the pages following. The troubles form the subdivisions of each monthly chapter and are discussed in relation to the plants they affect. The diagrammatic illustrations are only moderately expert but the essential information is there. A useful book and not in the least alarming.

The Gardener's Second Year. By Alfred Bates. Longmans Green & Company, New York, 1937. 278 pages, illustrated. \$2.00.

Like *The Gardener's First Year*, this is intended for the beginner whether he be young or old. It is written with the same admirable precision and enthusiasm. Just as the first volume limited its field to a discussion of annuals with various digressions and opinions by the author, this volume limits its field to perennial plants, leaving woody plants for some later date.

The book is divided into two parts, the second part of which is a discussion of various important perennial plants that the beginner should know.

The first portion is given over to discussion. There is first a description of the various types of perennials based upon their root formation with a useful diagram. Chapters two to eight inclusive deal with the plan-

ning and making of the garden. Then follow two chapters about names. Chapters eleven to sixteen inclusive have to do with care and maintenance, beginning with propagation in its various phases and ending with feeding. Two chapters, *Need for a Garden Library* and *More Opinions* brings one to Part Two.

As before, Mr. Bates' book is clearly and pleasantly written with enough of humor and opinion to pique the interest of the old and hardened. His opinions, however, are always clearly stated as such and not written down as pronouncements. We liked the first book; we like this better. Here's to the next!

Your City Garden. By Margaret McKenny and E. L. D. Seymour. The D. Appleton-Century Co., New York, 1937. 215 pages, illustrated, \$2.50.

This is such a nice book it tempts one to a serious consideration of moving into the city and having a small garden that can be, has to be managed. The first impression one has in turning its pages is the excellence and the diversity of taste recorded in its pictures; one's second impression is that the garden budget for the year might be as large or larger than for a larger country home.

The introductory chapter stresses the need for gardens in cities, the next two chapters their planning, the next three plant materials specially suited for city use, the next two construction and maintenance. After that the various chapters treat of specialized topics; roof gardens, window boxes, indoor gardens, neighborhood or community gardens and last of all city garden clubs. As has been said before, the book is marked by its excellent taste and its sound advice.

The Garden Primers. By Cecile Hulse Matschat. Houghton Mifflin Company, Boston, 1937. About 90 pages each, illustrated, \$1.00 each.

These are books for the beginner, simply written, giving fundamental data and nothing else.

How To Make A Garden covers the basic features, Soil Preparation, Propagation, Planting, Troubles, Maintenance.

Planning the Home Grounds discusses, Choice of Home Site, Development of Plan on paper and on the ground with a necessary choice of style, with a special chapter for the lawn and the greenhouse.

Annuals and Perennials, of course, falls into two parts but each part is alike in plan. What plants should one choose, where should they be planted, what care will they require, what will they yield.

Shrubs and Trees. Choices must be made between deciduous and evergreen, flowering or fruiting, care must be exercised in planting and maintaining; these are the topics.

Bulbs and House Plants. This is the least good of the series. The bulbs are given scant space and if the beginner did not know they were fine things he might decide not to bother. The house plants fare a little better. The essential difficulties and necessities are all there and are followed by a list of plants which contains too many items that are more easily bought from the florist in flower than maintained all year round by the home gardener. There are of course a few pages on terrariums and aquariums for gardeners of that ilk.

One has the feeling that most of the essential matters are included but one does not read these books with much pleasure.

The Gardener's Pocketbook

Robinia hispida (See page 131)

Robinia hispida, the rose acacia, is a much branched stoloniferous shrub with handsome racemes of roseate blossoms and compound leaves. It is native from Virginia south to Georgia and Alabama, and like so many shrubs of that region is quite hardy here on our hilltop at Peekskill. Unfortunately as the French say of certain people "*Il a les défauts de ses qualités*" (He has the faults which accompany his virtues.) The stoloniferous character of the shrubs insure their persistence in the garden but at times the many suckers which result from the habit of the roots are aggravating for they grow a long way and crop up where they are decidedly not wanted. The ground around the robinias has to be spaded thoroughly some time in July and thereafter the suckers are easily controlled. However, the plant is so handsome that this trouble seems well worth while.

The shrubs grow nine feet high and are charming as a background to dianthus and dictamnus which bloom at the same time. A few blue camassias would be attractive planted in with the robinias.

The old stems are red brown. The young stems are green and with the buds are covered with bristly dark red hairs.

The leaves are four and a half inches long and are compound with seven to thirteen leaflets, and leathery to the touch. The leaflets are opposite, oblong, obtuse, mucronulate and from the tip of each leaflet there is a little thorn-like projection. Each leaflet is one inch long and one-half inch across. The flowers are in droop-

ing racemes, pea-shaped and pinkish with a magenta tinge and handsome. Each blossom is one-quarter of an inch long. The green calyx is tinged with red and it with the flower pedicels are covered with hairs, which give a contrasting effect to the smooth rose colored flowers. The flowers are not fragrant and they blossom the end of May to early June in my garden and right after the honey locusts have finished scenting the whole neighborhood with their delicious fragrance.

Zenobia pulverulenta (See page 132)

Two years ago the *Zenobia pulverulenta* made its appearance at the Spring Flower Show in New York. It was the first time I had seen it and to me its attractive green leaves and racemes of bell like flowers were most appealing. This attractive newcomer, that is, new to me, is a native American plant which grows from North Carolina to Florida.

According to Dr. Bailey the shrub does best in sandy or peaty soil and as was demonstrated at the Flower Show, he says it is adapted to forcing. The shrub grows to six feet in height and has woody branching stems. It is subevergreen. The leaves are bluish green, alternate, oblong ovate, two and a half inch long and the margins are toothed. The leaves are smooth and pale green beneath. Dr. Bailey says there is a glaucous bloom covering the leaves. I did not note this and perhaps my specimen is *Zenobia pulverulenta* var. *nuda* which is without the bloom. As it is now winter I cannot check up on this. The young leaves are pale green on pale green stems and make a pretty

contrast to the darker color of the older ones. Also in the petiole there is a tinge of rose.

The flowers are in racemes of white pendant bells, each three-eighths of an inch across. The flower stems are pale-blue green, like the leaves. The flower spike the first year (I have not had it longer) is three inches long. The flowers are in clusters of six flowers, some on one side and some on the other side of the stem of the raceme. There are smaller leaves on the stems under the flowering racemes. The corolla is well shaped, and white and has five shallow lobes. The calyx lobes are five, triangular and a very pale green. The stamens are cream colored tipped golden brown and glisten in the heart of the flowers around the base of the pistil which projects beyond the corolla.

The flowers resemble a magnified lily of the valley, if it were pendant instead of erect and they are very lovely. They bloomed the second week in June here and lasted quite a while.

Lycoris radiata (See page 133)

This bulb of the Amaryllidaceae is involved in an interesting mistake of identification which has recently come to light. The error is of significance to thousand of garden lovers in the lower South. All indications at present point to the fact that thousands of the bulbs of *Lycoris radiata* have been passing as *Nerine Sarniensis* or the Guernsey Lily for many years.

The two bulbs are alike in some respects botanically, but quite distinct in others. The true *Nerine Sarniensis* comes from South Africa, and *Lycoris radiata* is from Japan. The matter is complicated by the fact that *Lycoris radiata* has been known in the past, although not on good authority, as *Nerine Japonica*.

Both plants produce their leaves in the winter and ripen off the foliage in spring. All summer the bulbs are dormant. The lycoris blooms from July to September in the southern states. How the bulbs remain quiescent during the humid summer months of heat in Florida is a mystery.

The question of the true identity of the bulb commonly known as "red spider lily" or Guernsey Lily in the Southland and California arose when bulbs of the true species *Lycoris radiata* were imported from Japan by California growers and proved to be identical with what was passing in the United States as *Nerine Sarniensis*. This masquerade had been going on for many decades, perhaps a century, so far as the writer can ascertain. Lately through the assistance of the Brooklyn Botanic Garden, all doubts of the matter have been removed.

The name *Nerine Sarniensis* has been applied to the "red spider lilies" in the South for so long a period that the memory of man runneth not to the contrary.

Sarniensis is Latin for "of the Island of Guernsey," and relates to the old story that the bulbs were first discovered blooming in the sands of that member of the Channel Islands, where they were supposedly washed ashore from a vessel shipwrecked on a voyage from the Cape of Good Hope. The name Scarborough Lily for *Val-lota purpurea* has a similar history. The bulbs of *Lycoris radiata* grow in every other yard or doorway in the mid and lower south, mostly the older sections. The fresh-colored scarlet blossoms rise on stiff stems in the late summer when the foliage is absent. The specific name *radiata* is derived presumably from the sym-



Walter B. Wilder

[See page 129]

Robinia hispida



Walter B. Wilder

[See page 129]

Zenobia pulverulenta



[See page 130]

Lycoris radiata

metrical way in which the individual flowers "radiate" from the top of the scape. They face in a complete circle in large umbels.

The flowers are excellent in keeping quality when cut, but have been shipped to market with little success. They are distinctly unusual and striking. The stamens project out from the tube with a dazzling spidery effect. The bulb requires little care or attention in cultivation, but is reported not to do well in pots. In the greenhouse it is said to refuse to bloom after the first year, and to spend its strength splitting up into numerous offsets. The increase by offsets naturally is quite rapid. It is fairly hardy, and will survive where the soil does not freeze solid for any depth in winter.

How the many large plantings of the bulb came to be located in the United States is somewhat of a mystery, except that it is an indication of the vigor and adaptability of this bulb. Possibly the plants were first introduced from Japan by way of England or the continent, or they might have been brought in direct with a shipment of goods or plants from the Orient.

It is somewhat doubtful whether there are any bulbs of the true *Nerine Sarniensis* in the trade in this country, and from the writer's experience with other nerines, it seems doubtful if the true species will be as valuable an item for Southern gardens as the lycoris. The true *Nerine Sarniensis* is offered by dealers in Holland and England.

Japanese cytologists have reported the chromosome complement of *Lycoris radiata* as 33, with a cardinal number of 11, indicating the plant is a triploid, which may explain the failure of the bulbs to set seed under any

and all conditions hitherto observed by the writer. The condition also would indicate a complex genetical history.

Two other species of lycoris have found the American climate suited to their culture in the open ground, while no nerine species has really made itself at home in the United States to the same extent. *Lycoris squamigera*, the "hardy Amaryllis" is well known in the north and middle states, being fairly hardy in Ohio and Massachusetts. *Lycoris aurea*, a very beautiful species, is found in old gardens in the vicinity of St. Augustine and a few other places. It is reputedly not so hardy. It blooms and thrives in the Florida climate.

WYNDHAM HAYWARD.

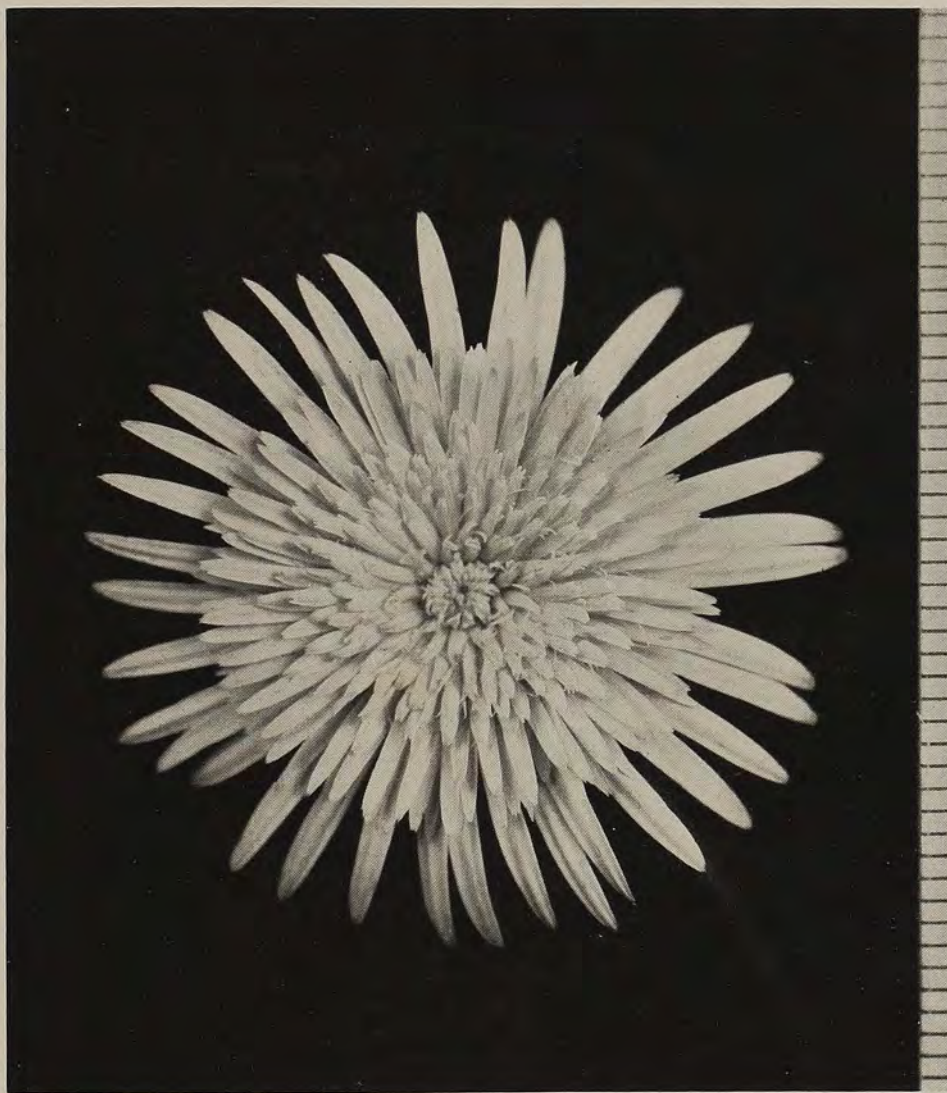
Winter Park, Fla.

Double Gerberas (See page 135)

The double types of the *Gerbera Jamesonii* hybrids, that increasingly popular florists' flower, and gem of warm climate gardens, are undergoing rapid development in recent years at the hands of a few faithful hybridizers.

The illustration accompanying this note shows a good seedling type of the newer double *Gerberas*, which bloomed from a plant less than one year old. It is slightly more than four inches in diameter, and when the plant is older may be expected to exceed five inches or so. The color is a delicious salmon rose, so striking that a single flower makes a really attractive nose-gay with a little asparagus "fern."

There have been three or four old types of the double *Gerberas* or African daisies, painted daisies, Transvaal daisies or Barberton daisies as they are variously known. These are shy at setting seed, but with conscientious effort a few seeds can usually be produced if enough attempts at



[See page 134]

Double Gerbera

Each space on the rule is one-eighth inch.

pollination are made. The pollination of Gerberas is something like rubbing two powder puffs together, face to face.

The flower pictured came as a definite mutation from one of the older types, the seedling blooms being twice

the size of the parent flowers. There apparently is considerable tendency in the doubles to "break," which is helpful to the hybridizer. About half the seedlings from the doubles revert to singles again, mostly nondescript types. Of those retaining the double

character, very few are superior to the parents, but those few are excellent indeed.

Plants of the doubles are offered in various colors by dealers in England and Japan, but are available only in a limited way in the United States, although several growers are endeavoring to build up stock of the superior types. The plants grow with the same requirements of culture as the singles, and multiply about as fast. Their main troubles are the root knot nematode and a fungus blight which destroys the foliage. These difficulties can be controlled by soil sanitary measures and the proper sprays.

WYNDHAM HAYWARD.

Winter Park, Fla.

Telopea speciosissima (See page 137)

When Captain Cook landed on the East coast of the then almost wholly unknown continent Australia, he transported his botanical staff, including the eminent Sir Joseph Banks, into what was literally a botanical paradise, where practically every plant was novel, strange, interesting or beautiful. So great was the floral wealth of this spot that it was christened, appropriately enough, Botany Bay, located in the suburbs of the modern Sydney, where the occasion is still commemorated by a monument to Sir Joseph.

In the floral pageant of this region a prominent part was played by the various members of the family *Proteaceae*, comprising such genera as *Grevillea*, *Hakea*, *Banksia*, etc., all totally unknown in the Europe of those times; and even today mere botanical curiosities in the colder countries of the Northern Hemisphere; requiring to be nursed with care through the winters in special greenhouses.

Our genial California climate, how-

ever, permits us to grow many members of this family out-of-doors; and increasing numbers of these *Proteads* are now coming into cultivation here and beginning to receive the appreciation they deserve. Unquestionably one of the very finest of these *Proteads* is *Telopea speciosissima*, the "Waratah" of the aborigines and colonists, pictured herewith. Photographically, this subject cries aloud for a colored representation, as any black and white picture must fail to do justice to such a brilliantly colored flower. The dense clusters of bright scarlet flowers attain to a diameter of 3 inches or more, are subtended by numerous equally bright-red bracts, last several weeks in water; and fully justify the popularity of the Waratah in New South Wales, where it is utilized extensively as a X-mas decoration.

Some flowering sprays of this, shown at a recent exhibit of the California Horticultural Society, aroused the avarice of all plant-lovers that saw it and much curiosity about the reason for its scarcity. For the past two years this choice item has been flowering in Golden Gate Park, San Francisco, where they have passed through at least two winters when the temperature dropped to 24 degrees Fahrenheit, thus demonstrating that *Telopea* is among the hardiest of the *Proteaceae*. Since the plants in question have thriven without any special care other than the weekly watering necessitated by California's rainless summer, nothing would seem to prevent the more widespread cultivation of this exceptionally decorative flowering shrub, aside from the difficulty of finding any place where plants may be obtained. The present scarcity, amounting to non-existence in the trade, must be attributed to the exceeding predilection shown by seed-



Eric Walther

[See page 136]

Telopea speciosissima

lings of *Teloepa* to succumb to damping-off. Since seed is available in quantity, this one difficulty should prove no insuperable barrier to cultivation of such a choice item, merely requiring some special care in use of a sterile seed-soil, or possibly recourse to agar-culture. As soon as cuttings become available, these may provide a quicker and safer method of propagation.

The genus *Teloepa* consists of three species, of which the one here pictured is undoubtedly the showiest. *Teloepa truncata* and *T. oreades*, the others, are also undergoing trial in Golden Gate Park, may be presumed to be even more frost-resistant, but have not as yet flowered. All of these are evergreen shrubs becoming 6 to 12 feet tall or more, with evergreen, leathery leaves 3 to 5 inches long, with each of the numerous, erect branches terminated in season by one of the brilliant red flower-clusters.

ERIC WALTHER.

San Francisco, Calif.

Weeping European Larch (See page 139)

Unless examination of the rarely borne cones decrees otherwise, the larch of the illustration may be presumed to be *Larix decidua* var. *pendula*. There are two trees at Cedar Hill Cemetery, north of Newburgh, New York, in the old section reputedly planted by Charles Downing. Since it is in this section that Andrew Jackson Downing is buried, other gardening friends may have associated themselves with his brother in the planting. Certainly, a Downing landscape effect was created with, characteristically, a variety of interest in the kinds of trees used. There is a typical combination of ginkgo with a dark-foliaged tree, this time white pine, a bald

cypress, a dwarf variety of Norway maple, beeches in variety and (at one side of the picture) thornless honey locust.

In the sixth edition, 1859, of Downing's *Landscape Gardening*, Henry Winthrop Sargent has inserted a cut of a weeping European larch at Wodenethe aged eight years accompanied by a note which describes its origin and makes recommendations for its culture. It is not improbable that the two mature specimens in Cedar Hill Cemetery were secured at the same time as the Wodenethe specimen and have survived it.

I have not found in the literature on larches any illustration comparable to the one shown. There is one remarkable tree of quite different character in Suffolk, England, with horizontal branches to the extent of 100 feet, supported on poles, but which never ascend. This form is considered by A. Henry to be *Larix pendula* var. *repens*. *Larix pendula* is the hybrid of European and American larch.

Representative pinetums should be interested in obtaining cions from the Newburgh trees as it is too highly picturesque and valuable a tree to be missing from such collections.

BERNARD HARKNESS.

A Studied Rock Planting (See pages 140, 141)

Near Pawling, New York, there is a most charming and intimate rock garden. The designer, Mr. A. W. Hosteck, now of Newburgh, N. Y., was called upon to build a small rock garden with some relation to the existing perennial border which winds in and out under some old apple trees at one side of the vista across rolling meadow directly in front of the house. A small outcropping of smooth rock



Bernard Harkness

[See page 138]

Weeping European Larch



Bernard Harkness

Umbilicus chrysanthus in flower, *Semprevivum arachnoideum* and a seeding *Draba*

revealed, after careful excavation, the beautifully carved and grooved surfaces hidden beneath the soil. Only a very few rocks were added; the steps at one side were necessary to aid in that skipping from crag to ledge that every rock gradener must perform.

The small scale of the garden made it possible to forswear the use of "drifts of color." Instead year round interest is secured by small groupings of rare and beautiful plants—the selection of which is a credit to Mr. P. J. van Melle and the Poughkeepsie Nursery Co. The cracks and crevices of the big rock invite sempervivums. *Semprevivum fauconnetti* is especially interesting. *S. soboliferum* is scattering its progeny about. In the middle of June this year there was a considerable flower display, though this garden's prime glory, as with most others, comes earlier. There were the creamy spikes of *Umbilicus chrysanthus*, the brighter flowers of

various sempervivums, the lovely blossoms of *Cymbalaria pilosa*, a few Iceland poppies in the background, white thyme at the base of the rock, and scattering late blossoms of saxifrage and dianthus.

In a year's time this garden has grown into an artistic whole. Its beauty is not dependent on showy bloom, but on the relation of shape and form of plant to the line and formation of the rock. It is difficult to understand why so many constructed rock gardens are boulder-strewn pyramids when the more natural, horizontal formations can be made as interesting as this garden.

BERNARD HARKNESS.

Rhododendron ombrochares (See page 142)

Its relatively mild winters and cool summers make San Francisco's climate one ideally suited to the cultivation of Rhododendrons. Not only do



Bernard Harkness

An intimate rock garden with a selected planting that emphasizes the general features.

the various hardy species and hybrids thrive here, but such more tender subjects as the species of the *Maddeni* Series, exemplified by Rh. "*Fragrantissimum*," pictured here recently, or the various species constituting the *Irroratum* Series, generally considered impossible in Great Britain, also are found to be quite amenable to the usual cultural conditions granted members of this genus.

As an illustration of this assertion we herewith submit a photo of a flowering-truss of *Rh. ombrochaes* Balf. f. & Ward. The plant in question was grown from seed gathered by Dr. J. F. Rock on his expedition from Burma to S.W. China some years since, it being indigenous to N.E. Upper Burma, there occurring at 7,000-8,000 ft. altitude. The specific name has reference to its inhabiting the open shade of the forest, but here the species will thrive even in the open if given sufficient moisture

and some shelter from cutting winds.

The corolla is stated to be deep or cherry crimson, but in our plants at least tends to be a clear rose. The deep crimson spots in the throat are distinctive. In habit and color it can bear comparison with most of the better hybrids, and is often mistaken for one.

Since the Series *Irroratum* is an exceedingly puzzling one we submit our determination for what it may be worth.

ERIC WALTHER.

Lilium tenuifolium (See page 143)

This little lily is one of the easiest to grow and one of the most satisfactory garden subjects, at least for me. It flowers from the very end of May when the first buds open on into July when the last flowers fade. The stems of older plants are quite tall, some being as high as three feet or three feet six inches. The stems are

*Eric Walther*

[See page 140]

Rhododendron ombrochaeres

smooth and slightly ridged, some of them are darker than others and some are hairier than others. The color of the perianth segments varies, too, from the pale orange of the var. Golden Gleam to the lacquer red of the type. Perhaps this has happened in my garden where I have been growing these lilies from seed collected on the place for the past ten years. The leaves are very narrow, linear and without leaf stems and pointed at the tips and have a swirling upward motion swishing to the right and are crowded on the stems. They are thickest and

longest at the centre of the stem. Where the leaf joins the stem, on either side is a tiny white tuft of fluff.

There are fourteen flowers on this one and often far more. They are on stems 2"-3" long, growing shorter as they ascend and having a leaf on them. The stems turn down before coming to the flower which is of a shiny lacquer red, and reflexed so much that the segments overlap at the back. The outer and inner segments do not differ much, except that the three inner ones have a ridge on the



Margaret DeM. Brown

[See page 141]

Lilium tenuifolium

back of them, marked greenish at the base of the segment on the outside. Inside, the flower is marked a pale flesh at the base of the segment and there are tiny ridges in the red waxy portion. The filaments are a muddy flesh color, the open anthers are filled with pollen the same color as the segments. The stamens are $\frac{7}{8}$ " long and curve out when ripe. The ovary is longish, green ridged in six parts, the style being a deeper tone than filaments but the same color, the stigma is a bit tinted with mauve, and furry at the tip when ready for the pollen. In some specimens it is a dainty waxy scarlet flower but has a somewhat musty and unpleasant odor, which is fortunately not very strong. The idea has gone abroad that these lilies are not long lived. I have not counted the years but by watching them it seems to me that some of the bulbs have been in my garden at least five years or more. The trouble is that occasionally when crowded in flats or in cold frames the bulbs develop a root mite, which weakens them so much that they die. This lily is charming with a ground cover of money wort under it, with late flowering forgetm-nots, chinese delphiniums or early campanulas. It likes a little shade and a sandy soil or one rich in leaf mold.

HELEN M. FOX.

Peekskill, N. Y.

Synthyris rotundifolia

Winter in Western Oregon has a few flowers of its own. Pussy willows are often here by Christmas, the beaked hazel hangs out its long graceful catkins in February, and at any time between Thanksgiving Day and Lincoln's Birthday, one may discover the first lavender blossoms of the Spring Queen, or Spring Greeting, or as the Indians called it, Mowich.

There are so many wildflowers that are utterly delightful in their native setting, but when naturalized in the garden so unsatisfactory, that it is a pleasure to find one that definitely improves with cultivation. Such a one is Mowich, *Synthyris rotundifolia*. In the woods, under firs and hemlocks, its flat-lying round evergreen leaves are seen on the ground, though its crown and the close cluster of flower stalks may be covered over with a wintry blanket of fallen needles. As the flowers bloom, they are lifted above the leaves on stalks an inch or two long. A bunch of them is only big enough for a doll's corsage.

After a year or two in the garden, the plant is much larger and the flower stalks twice as long and as numerous. It can get on without the deep shade of evergreen trees, provided it has light soil, mostly leaf mold, and a semi-shaped situation, such as the north side of a big, hospitable boulder. The plant self-sows, and if not too much cultivation is done, there are sure to be seedlings. To raise it from seed, get the seed the same year it is ripened, and sow it out doors in autumn in a suitable bed, somewhat shaded. Seedlings will appear in spring, and can be transplanted best in early fall, though with care and watering this may be done in spring.

In southern Oregon, a beautiful variety, *S. rotundifolia sweetseri*, with larger flowers, and a much wider range of color, replaces the type seen farther north. There are many shades of lavender, occasionally pink, white, and often a fine deep violet like the standards of *Iris reticulata*. The variety is a larger plant in all ways than the type, forming larger clumps, with thicker, taller flower stalks; yet it is not too large for rock garden use.



Lilian A. Guernsey

[See page 146]

Begonia Evansiana

The flowers are in bloom for two or three months, if one has them in different situations, and in considerable number. If a snowstorm comes while they are in bloom, they retire under the snow as snowdrops do, or winter blooming heather, to mark time till the snow melts. The plant seems perfectly hardy here, but sometimes in bad freezes, when there is no snow and the buds are exposed to the wind, there will be some blighting. This suggests that in colder climates, the plant may need a winter mulch of leaves around the crown, as in the woods.

The Indian name Mowich means deer, and was given to this flower because it was unlawful among the Indians to hunt the deer in the months when the flower was in bloom, because in those months the deer ought to be unmolested, to care for the young fawns.

DREW SHERRARD.

Begonia Evansiana (See page 145)

There have been notes on this species in former issues of the magazine and one illustration that gave a general habit picture, but of a pot-grown plant. The present illustration is given to show the character of the flowering.

The blossoms that are open are all staminate, but the pistillate flowers can be seen below them in each case, with their characteristic three-sided seed-pod-to-be. This sequence gives two color effects with the plant for the wide open staminate blooms of a clear bright pink make a bright rosy show. The pistillate flowers are of the same hue but as the capsules develop they often show a ruddier pink that gives the mass a warmer tone as autumn comes on.

In those areas where the plant is

hardy and these are fairly numerous, it is most useful where there is a rich moist soil, well-drained in winter with good light, but not more than half a day in sunshine.

Should the old plants be winter killed, they are often replaced by innumerable small plants that spring up from the bulbils that form in the axils of the leaves. If these are given good culture, they flower well the first season, but, of course, cannot compete with the old established clumps.

As one sees this plant in old gardens, one cannot but wonder if there are not other begonias than this, that might prove hardy in regions of frost, even if the genus is indeed a tropical one.

It would be helpful if any members who grow this sort would report it, in order to assemble some data on the range of its present distribution, growing out-of-doors.

Rhododendron indicum var. Benikirishima (See page 147)

There are many variations of the late-flowering *Rhododendron indicum* which still appears in some lists as *Azalea macrantha*. The species varies in color from pinkish or orange salmons toward salmon reds, some of the darker forms with a darker blotch on the uppermost lobe of the corolla.

There are also variations in habit from those plants that spread widely with no great height to taller-growing less compact varieties.

There are also variations in the corolla from the usual single through various degrees of doubling to the camellia-like variety, *balsam inaeiflora*.

This variety is almost without vestige of either stamens or pistil but is not as full a flower as the last mentioned. It belongs in the group with rather open, upright habit and bears



Lilian A. Guernsey

[See page 146]

Rhododendron indicum, var. *Beni-Kirishima*



Lilian A. Guernsey

[See page 150]

Aquilegia flabellata nana



Lilian A. Guernsey

[See page 150]

Osmanthus ilicifolius

flowers of a most brilliant red, almost scarlet hue. Like its fellows, it is evergreen and late-flowering. If a mixed planting of these sorts is considered, it should certainly be represented for it seems likely to develop a more uniform flowering than many sorts that content themselves with a scattering flower in June and intermittent flowering thereafter; a habit that does not endear them to many gardeners.

Like most of its fellows it does not want too much shade, but must not have too full sunshine if the flowers are to develop their best color without scorching.

Aquilegia flabellata nana (See page 148)

There are many forms of short-spurred columbines all of which seem to be much more likely for enduring under garden conditions than the long-spurred species and forms that are more commonly and more precariously grown. Only too often these short-spurred columbines are rather poor representatives of common columbine (*A. vulgaris*) and deserves scant attention, but this species in its best color forms need not be despised.

If one gets good seed of the plant named here, there will be only a small proportion of the resultant seedlings, that will not perpetuate the dwarf habit, and even fewer that will vary in color; except for the occasional pure white which is admirable. The plant is essentially dwarf with compact masses of foliage with largish leaflets often grayish. The flower stalks overtop the leaf masses very little and are stiffly erect and not much branched. The flowers are of good size and of a singularly clear blue purple color, the mouths of the petals sometimes white.

Although most columbines will tolerate considerable shade, the shorter-spurred kind seem the most amenable. This plant has flowered well even in fairly deep shade from trees. It did not have to compete with poor soil as the bed was deeply prepared and is replenished from time to time. Often plants planted in a lighter soil in full sunshine have not persisted as well and do not maintain their foliage in good condition for so many months in summer.

Osmanthus ilicifolius (See page 149)

In some ways this is one of the less handsome species of osmanthus but it does have the virtue of being hardier than most and therefore useful farther north than the others. Many persons on first seeing it, believe it to be a holly because of its leaves, and for hedges, where it will grow well, it makes a hedge that will bear shearing even better than holly, since its growth is quick and its habit much more twiggy.

If left to grow freely in this vicinity it will make, in time, a small tree with several stems and a spreading top. The difficulties of growth seem to come chiefly in the earliest years when vigorous growth is made too late in summer for proper ripening of the wood with subsequent winter killing of the new growth. Eventually the plant achieves a more normal growth and suffers less. When fully developed it flowers freely in late summer, often in autumn, so that fruit is not likely to mature. As the specimen from which the illustration was made is from a staminate plant, no picture of the fruits could be obtained.

If sheared, the plant will develop twiggy bushes that are rather good for defensive hedges since the spines of the leaves are sharp enough to discourage trespass.



Lilian A. Guernsey

[See page 152]

Allium albopilosum

There are several horticultural forms recorded, but the only one observed is the var. *atropurpureus* in which the dark purplish color is most apparent only on the young growths. It is of so dark a hue that it is not much of a variant if one is making a composition in greens.

If additional plants are needed, it is always possible to take a cutting of half-ripe wood for the sand box. Bottom heat hastens the rooting but is not absolutely essential.

Allium albopilosum (See page 151)

The original description of this species appeared in *The Gardener's Chronicle* for July 18, 1903, accompanied by a horticultural note and a full page wood cut, that differs considerably from our figure, especially in the density of the flowering head. The plants that have grown here were purchased from Van Tubergen so are presumably of the same stock as those described by Mr. Wright.

Certainly among the alliums planted for flowering effect, this is one of the most spectacular but it is spectacular

rather than beautiful.

The bulbs are large but the outer coverings are somewhat soft rather than papery. The leaves which are produced very early in the spring so that they are often injured by frost, are large and flat with smooth upper surfaces and scattered white hairs on the lower surface and margins. The flower stalk is about fourteen inches high bearing a huge head or rather dull lilac flowers of a shape easily seen in the photograph that is about one half natural size.

Undoubtedly there are few alliums with more unusual inflorescences than this, but certainly there are others that are far more beautiful in color, for it has been remarked by others that this large genus has a very large number of species of a dingy lavender color.

The original description says that the plant was collected by Sintenis "in the mountain range that divides Transcaspia from Persia."

Like most alliums it is raised from seed with no difficulty if the seed is fresh.

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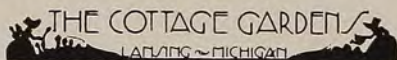
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Published by and for the Society

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For its members the society publishes *THE NATIONAL HORTICULTURAL MAGAZINE*, at the present time a quarterly of increasing importance among the horticultural publications of the day and destined to fill an even larger role as the society grows. It is published during the months of January, April, July and October and is written by and for members. Under the present organization of the society with special committees appointed for the furthering of special plant projects the members will receive advance material on narcissus, tulips, lilies, rock garden plants, conifers, nuts, and rhododendrons. Membership in the society, therefore, brings one the advantages of membership in many societies. In addition to these special projects, the usual garden subjects are covered and particular attention is paid to new or little known plants that are not commonly described elsewhere.

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