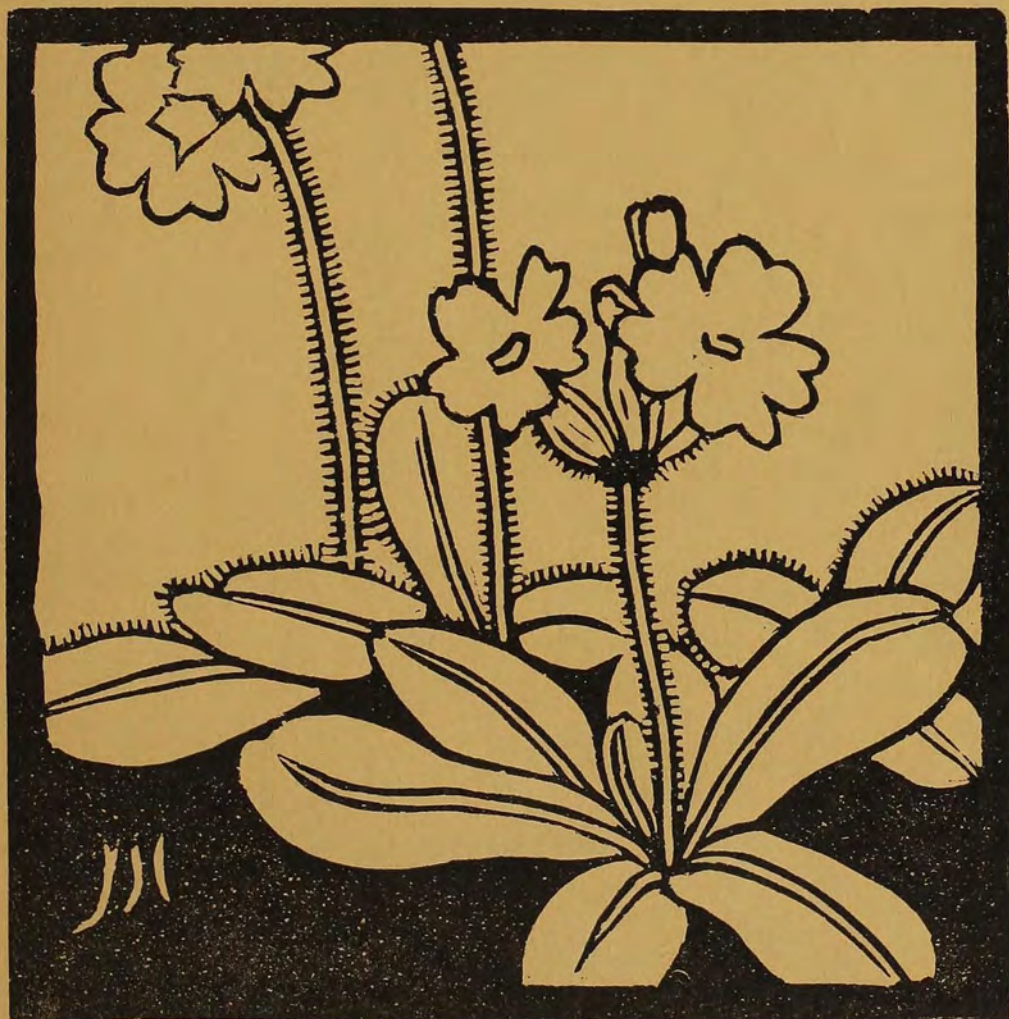


The NATIONAL
HORTICULTURAL
MAGAZINE



APRIL 1930

The American Horticultural Society

Devoted to the popularizing of all phases of Horticulture: Ornamental Gardening, including Landscape Gardening and Amateur Flower Gardening; Professional Flower Gardening and Floriculture; Vegetable Gardening; Fruit Growing and all activities allied with Horticulture.

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No. 2

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Among our contributors for the first time, we welcome *Mr. E. H. M. Cox*, the distinguished editor of *The New Flora and Sylva* whose recent lecture tour in this country has encouraged so much interest in primulas and rhododendrons; *Mr. Knowles A. Ryerson*, our new First Vice-President, traveller and horticulturist, now in charge of The Office of Foreign Plant Introduction, Bureau of Plant Industry, U. S. Department of Agriculture, and *Dr. Fritz Lemperg*, whose paper on *Roscoea* has been translated and reprinted by special arrangement through *Dr. Camillo Schneider*. *M. Correvon* needs no introduction and *Mrs. Heath*, who has done so much for establishing the wild flowers of her region as garden plants, and *Mr. Duffy*, whose garden is a proving ground for many new plants each year, are also well known and valued contributors.

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Paul Russell

Prunus subhirtella pendula
F. P. I. 45216

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American Gardens Through Other Eyes

By E. H. M. Cox

I have taken a keen interest in American gardens during various visits to the United States within the last ten or twelve years. You will hear people, and even intelligent people, remark that horticulture is the same the world over. It may be that the manual labor in the production of plants is the same, but the result aimed at is different, totally different.

So much depends on the national outlook and attitude towards gardens. In every corner of the world you will find one that differs from its neighbors; that is the exotic garden, as exotic as many of the plants it contains. You can not get an insight into the national outlook by visiting specialized gardens, which are often just copies of others in far distant parts of the world. Rather does the knowledge come to you slowly by looking about you as you move through the country. You take note of the ordinary, not the extraordinary.

To me there are four great points of difference between the gardens of the United States and those of the British Isles. As these points can be called criticisms, and have been taken as such by those with whom I have discussed the matter, it is only fair that I should give the answers I received.

First, almost all gardening in the United States is done by, or, at least, is under the control of women. In the British Isles women are not looked upon as being thorough enough to make the perfect gardener; of course with exceptions. They are in too great a hurry and are inclined to be careless in matters of cultivation. On the other hand they have a greater flair for the pictorial value of flowers and can visualize the result better than most men. I think that perfect teamwork is obtained by the combination

of a man and a woman in the garden, the man to do the cultivation, the woman to supply the imagination, and much of the success in a garden depends on the power of looking ahead.

The answers to this criticism came pat. Labor is expensive and in many gardens the entire work has to be done by the women of the house. Then there was the excuse that the men are usually too busy to garden, and that in their hours of recreation they prefer their automobile and their golf. I passed both of those excuses without comment, as both would apply equally well in many cases in England.

There is a reason, and, I think, a true one, but it was only given to me by one individual, a man. That is the short twilight that you have in the United States. On our side of the Atlantic we have long daylight in the evening. In my garden in Scotland I can work until 10 p. m. from the end of May until the end of July.

That may seem a paltry reason for an excess of women gardeners, but let us look at it further. A man comes home from work any time between 4.30 and 6.30. With our long twilight he does not wish to be on the golf course or the road every night of the week, and if he has a plot of ground and any pretence to a garden he can not help but notice it. He begins by pottering; he learns, for instance, that his roses will bloom better for dead-heading; his interest slowly awakens and before he knows it he is a budding gardener. He has the added light in which to work and see the result even for half an hour every day of the week for eight months in the year, however hard worked he may be elsewhere. That is where we gain in the British Isles and where your hard worked family man loses. He lacks sufficient daylight. That I be

lieve to be the reason why there are so many more keen women than men gardeners in the United States.

Second. I notice the lack of background in your gardens; only occasionally are there divisions between one small garden and the next. The first thing that we do is to screen our gardens from outside eyes, even if we only copy the ostrich and make believe that we are hidden by putting up a low fence. At any rate we feel that if we are secluded our garden is ours alone; if it is not divided by something concrete from that of our neighbor, we lose the sense of ownership.

Personally I do not feel that way, but I do think that a wall or a hedge or a fence gives an air of finality to a garden, and that if it ends, as it were, in thin air it takes away from individuality of treatment.

I heard no serious criticisms of this argument, except that hedges and walls are costly. That extra money is well spent, for a background of green or brick or even of creosoted wood makes an excellent foil to the brilliant colors of an herbaceous border.

Third. I was struck by the lack of variety in the flowers and trees you grow. If I saw one front lawn with a Colorado spruce, a hydrangea and a lilac lording it in solitary state, I saw fifty. Now here I am treading on more difficult ground. I know that some plants grow superlatively well with you, and that no one can beat your peonies, your irises and your lilies, and that other plants, such as junipers, tulips and delphiniums, are at least equal to those of any other part of the world. But one swallow does not make a summer, and seven or eight or a dozen different plants do not make a garden.

I took pains, also, to learn as much as I could about the vagaries of your plant quarantine laws, how flower seeds may be imported, and trees and shrubs and alpine may not without a permit, how five-needle pines may not be imported into the State of New York even from New Jersey or Connecticut,

and how the movement of all plants is restricted in other States. I have also seen the damage caused by aster yellows and how China asters and other plants can not be grown owing to that disease. I have a very fair idea of the difficulties of your climate, how ice storms damage woody plants in New England, how difficult and treacherous are the climatic conditions on the lower Ohio River, and how New Jersey has to put up with particularly trying Augusts.

You see how fair I am being and how I have found plenty of excuses for you. But I still maintain that your variety in average gardens is much too small, even under your trying conditions.

Fourth criticism. You are more impatient than we are; you like your gardens finished and completed in the shortest possible time. This shows that you count the ultimate effect as the most important thing in your garden. In this you differ from many of us in the British Isles who are as interested in the actual process of growing a plant from childhood as we are in the finished product. Once we have a solid groundwork of floral display we give full rein to our particular bent and experiment with stubborn plants or new combinations or fresh situations.

I am, perhaps, extreme in feeling that the moment my garden was complete I should want to leave it and start one elsewhere, but I am not alone in that feeling, and there are many gardeners whose ideas run in the same direction.

I was amazed, and to be quite honest, rather horrified when I was shown a large nursery in the Eastern States and was told by the manager with pride that not a tree was sold from it under seven or eight inches in diameter of trunk. Obviously, from the acreage the nursery was a flourishing concern and was a visible proof of the desire of many of your garden owners to hasten the completion of the final picture.

That should not be taken as a criticism, the desire to finish the picture. It shows that we in the British Isles and you in the United States look upon gardens and horticulture from a different standpoint. You long for your garden as a pictorial effect, something with which to satisfy your aesthetic tastes. So long as you get the required and shape of plant to fit in with your ideas of a certain vista or planting scheme, it does not make very much difference what you grow, if, as it were, it pays its rent by producing of its best in your particular soil and conditions.

We also have a liking for the finished picture, but it is not so vital as it is with you. We also have an interest in the individual plant. We are nearer sighted and like examining the beauty of our plants at short range. That is possibly why our gardens show more individuality than yours. The really different permutations and combinations of the garden which is planted and planned at the start as a complete entity are not so numerous as they are in the garden where small corners and even solitary plants are given individual treatment which may have

nothing in common with the general garden scheme.

It is difficult to explain exactly what I mean, but we do not move so much in the general as in the particular. Many of our gardens grow of their own volition without any help from a landscape designer. I think that in many cases the lay-out of your gardens is very fine and superior to ours, but you lack the individual touches which give us such personal interest.

Some of your gardeners agreed with me over this point and put it down to the fact that horticulturally you are still a young country. Perhaps that is so; but to me the stumbling block to a real knowledge of more specialized horticulture is your plant quarantine restrictions. I heard people praise them, and more, far more, swear at them. I am not in a position to judge the rights and wrongs of their enforcement, but so long as they exist there is no doubt that they handicap the nursery trade, cause the really keen gardener an infinity of worry and bother, and retard the growth of what is one of the most wonderful hobbies in the world.



K. A. Ryerson

The large smooth drying floors of reddish soil appear like pools in the valley. Es Salt region, Transjordan

[See page 60]

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Vineyards of Transjordan

BY KNOWLES A. RYERSON

Since ancient times Palestine has been a grape-growing country and numerous biblical passages testify to the importance of the fruit. The vine-clad terraces of Judea and Samaria and the more recently established vineyards of the Jewish colonies along the coast indicate the importance of the crop to-day. The finest native raisins found in the Palestinian markets to-day, however, are not produced in Palestine. They come from the high country eastward across the Jordan River, now called Transjordan.

The World War remade many maps and wrote new place names in the headlines. Transjordan is a product of the shuffling at the Peace Conference. (Before the war it was a part of Palestine.) Bounded on the north by Syria and on the west by Palestine, its eastern and southern boundaries drift out into the desert in a rather indefinite way. It is a high and frequently hilly plateau, especially rugged where the country sheers off at the Jordan depression. In ancient Greek and Roman times great cities marked this eastern fringe of empire. At Jerash and Amman majestic ruins testify to departed glory. On this historic ground Colonel Lawrence and his Arab raiders carried on dramatic and, at the same time, highly effective warfare as the right wing of Allenby's advance that finally freed Palestine from Turkey.

The region has always been an important producer of grain. Where water is available, trees of the walnut and apricot thrive, and patches of alfalfa delight the eye with their refreshing green in an otherwise brown and burned landscape. But it is the grape alone, of all the fruits, that in the absence of irrigation has still attained commercial importance. The

climate is arid but breezy, the sunshine brilliant, the summer days hot but the nights cool, and snow falls at times in the winter. It is a region in which the grape thrives.

The center of the raisin industry of Transjordan is the old Arab town of Es Salt, lying about 3,000 feet elevation on the hilly plateau beyond the Jordan Valley, which forms the Jebel Gilead north of the mountains of Moab. It was the scene of some stiff fighting during Allenby's campaign in the World War. Here the otherwise tawny, rocky, upland terraces and valley bottoms are bright green from flourishing vineyards. Instead of the regularly pruned and staked vineyards to which an American horticulturist is accustomed, here are vines trained in rows along the ground, a method common in both Palestine and Transjordan. The laterals are pruned to a few nodes, the leaders extending on each year, ultimately attaining lengths up to 40 feet for a single vine.

VARIETIES OF LOCAL ORIGIN

The varieties grown are of local origin and there are many; most of them are light green in color, but a few dark types are to be found. The following varieties are the best and the most commonly planted: *Zeni*, a long, slender, very sweet grape, green in color; *Hadwani*, a large, meaty type and purple in color; *Biadi*, a large, round grape of whitish color, and *Khidari*, also large and round, green in color, and of fine quality. While raisin production is the most important activity of the Es Salt district, a considerable proportion of the fruit is sold fresh in the cities of Palestine, especially Jerusalem and Haifa.



K. A. Ryerson

Dipping grapes in lye solution preparatory to drying



K. A. Ryerson

*The large native grape varieties yield a raisin of excellent color and quality
After spreading they require no attention until gathered up two weeks later*

THE DRYING PROCESS

When fully ripe, the fruit is cut from the vines and brought to the drying floors in boxes slung on the inevitable donkey. These boxes are ordinarily the ever-useful gasoline or kerosene case. The drying floors are selected with an exposure to the south where possible, and where red soil is found, practical experience having shown that grapes dry uniformly on a red soil, whereas on a whitish soil the exposed side becomes dried quickly while the unexposed side is still moist and green. These small, smooth, bare areas dot the hillsides in the grape districts.

A hole sufficient to hold a gallon or two of water is frequently hollowed out for preparation of the lye solution used in dipping. It is lined with puddled clay to make it water tight, and wood ashes are leached in the receptacle thus formed. The dipping solution is mixed in large earthenware vessels, olive oil in small quantities being added from time to time as the amount of solution is reduced through dipping. The grapes are emptied into baskets holding from 30 to 40 pounds and these are then dipped into the solution for a few seconds, lifted out and drained for a few minutes, then dumped out on the drying floor to be spread by hand.

The fruit is left for two weeks undisturbed. In the clear, dry air, warmed by a desert sun, thorough drying re-

sults without turning. After the two weeks are over the bunches are gathered together in small piles and allowed to sweat for a few days, after which they are ready for market. They are transported by camel and donkey to the coast, both to Haifa and to Jaffa. Since the war the motor truck has also come into use in transporting the crop from this region. Egypt is the best market for Es Salt raisins, though Palestine absorbs some of the product, and small amounts reach other countries.

There is another raisin center a short distance north of Es Salt and not far from the tremendous and impressive ruins of Jerash, one of the magnificent cities that marked the Roman frontier in Arabia. The quality of product is not as high nor is the area as large as that around Es Salt.

The fame of California as a fruit-growing country has reached even these Arab villages that fringe the Arabian desert. There were many things that these growers of vines on ancient and historic ground and in the shadow of the ruins of Rome's frontier cities wished to learn about the grower of vines on the newer frontier of the Far West. The immense yields of our western vineyards, compared with those from their own rocky hillside fields, were unbelievable. "Allah is indeed kind to the California growers!" was the Arab's characteristic solution for such phenomena.

Among the interesting things that have come to light in the making of soil mixtures for plants that like ample moisture and yet no stagnation is the great value that must be credited to coarse sand and fine gravel. For seed flats, the addition of enough very coarse sand to make the mixture gritty to the ear when rubbed in the hand, often makes it possible to keep the

flat standing in a pan of water without ill effects. A mulch of very fine gravel such as is sifted out of cement sand, makes an excellent cover for pans of seed of succulents, even for seeds of saxifrage, that push up well between the stones and never rot off at the soil line. It also serves to keep down any film of moss that may arise.

The Sempervivums—Les Joubarbes

BY HENRI CORREYON

(Continued from page 14)

CHAPTER TWO

ESSAY ON THE CLASSIFICATION OF THE SEMPERVIVUM

A celebrated gardener-botanist of Lyon, M. Viviani-Morel, wrote me September 26, 1895: "Concerning the *Sempervivum*, I certainly believe that one should forebear to consider them from the point of view of a monograph. It is a bottle of ink as black as hell. I have cultivated about 6,000 pots of them during twenty-three years, and one is able, by considering the diminutive forms, to set the number of different types at five or six hundred; but each type varies in its turn. The *piliiferum* pass insensibly to the *arachnoideum*, the *tectorum* to the *arvense*, etc. From the horticultural point of view, the genus is one that can not be more mixed; according to his convenience, every one gives a name to the plants that he cultivates: frequently the labels are exchanged and, in several collections I have seen, I have counted as many errors as there were subjects! It is a veritable medley."

That is the opinion of the man who has the best cultivated and the oldest collection of this genus, so curious and many-formed, for he was the gardener of the famous Jordan.

The Gardener's Chronicle of June 13, 1908, p. 392, says: "There is not one book, not one recent monograph of the *Semperviva*, and no one has attempted a classification since that of J. G. Baker in the Gardener's Chronicle (1874, II, p. 103). There does not exist, at the present time, anything more complete than that given by Nicholson in his horticulturist dictionary and than the *Icones* of Jordan and Fourreau; there has been an-

nounced a monograph in the *Pflanzenreich* of Engler but that has not yet been published." (While this work was in press, there has been announced a work on the *Semperviva* by M. Praeger.)

And so on. There is little anywhere. There is nothing. All is difficult and mixed up. All is vague and not precise. The plants must be studied alive, according to the botanists. One sends them live plants, as many as they ask for, but they shrink before the task which seems too difficult to them.

Rouy has given us in his *Flore de France* a very concise study of the species growing in France. It is true that some claim that he has not only mixed up the genus but that from him they know less than before. "By what right does he change the names?" cry some. "Why does he tear apart in the same way the types and gives us so many forms and varieties?" ask others. Alas! they should try to do better but none of them dares. The number of intermediate forms is considerable, because the plants hybridize with one another freely.

"The hybrids," say Schinz and Keller (*Flora der Schweiz*, Vol II, p. 97), "are very numerous. Where two species are near one another, one is surely able to find intermediate forms nearby. In many places, among others the Val Faene (Bernina), one finds more hybrids than pure types."

All this complicates matters. I myself have testified that not only do the plants hybridize but that the subsoil, by its chemical composition, affects the form of the *semperviva*. It is on mixed rock formations, as where they conjoin, or where stratifications of different natures meet, that one finds

the largest number of different forms. On the rocks of the gorges of Cians (Alpes-Maritime), where the permian joins the limestone, I have found many of the intermediate forms between *calcareum*, *tectorum* and *arachnoideum*. There is a whole range with as many forms and colors as the rocks which bear them. On the cliffs that command the road climbing to Saint Sauveur-sur-Tinée at Roubion, the rock is sometimes permian and sometimes limestone, with frequent mixtures. There one may collect many strange forms, among them a curious type affecting the dark brown color of the rock. I had already discovered it in 1914, above Saint-Etienne-de-Tinée, among the débris of permian which is mixed there with limestone. Afterwards I collected it at Cians, in 1922, mixed with many other related forms. This dark brown form differs from the *Sempervivum triste* of Hampe. While waiting for a monograph to publish its description I have placed it in my collection under the name of *Piedoyanum*, the name of my friend, Piedoys, who called it to my attention in 1921, in our descent of the shoulder of Roubion.

The Italian botanist Vaccari has published (Annali di Botanica, Prof. Pirotta, Vol. II fasc. 2), under the name of *Il Sempervivum Gaudini et la sua distribuzione nelle Alpi* a concise and very interesting study of the species of this group. If other botanists would consent to practice this kind of description and this accurate method, we would see much more clearly in this obscure domain.

J. G. Baker, the keeper of the herbarium at Kew, attempted, long ago, in the Gardener's Chronicle (1874 and 1879) a description based on the morphology of the plants rather than on an analysis of the floral parts. There follow the principal species:

GENUS *Sempervivum*

Subgenus I.—*Sempervivum* proper.

- 10 to 12 sepals, 10-12 (patulous) petals,
- 10-12 carpels, short attenuate to a short style, divergent, and forming a star.

Division I.—True *Semperviva*, with pink flowers.

Group I.—TECTORUM Leaves glabrous on both faces, bordered with a line of hairs not exceeding 0.5-0.7 mm. in length.

Subgroup I.—Leaves large, obovate-spatulate, tinted with rose, up to 18 mm. in size—*S. tectorum* and its varieties.

Subgroup II.—Leaves oblanceolate-spatulate, 2.5-3.5 cm. in length, green or greenish, with a distinct red-brown tip—*Sempervivum alpinum*, *arvense*, *boutignyeanum*, *brachiatum*, *cantalicum*, *celsicaule*, *collinum*, *corymbosum*, *dicranocladum*, *dolomiticum*, *erubescens*, *guillemotii*, *leptopetalum*, *mettenianum*, *modestum*, *rigidum*, *robustum*, *rubicundum*, *saxosum*, *schnittspahni*, *speciosum*.

Subgroup III.—Leaves of the shape and coloring resembling those of Subgroup II, but much smaller, stalks shorter—*S. constrictum*, *parvulum*.

Subgroup IV.—Leaves oblong-spatulate, about 2.5-3.5 cm. long, 1 cm. broad, very glaucous with a red-brown stain on the tip—*S. calcareum*, *columnare*, *luxurians*, *pyrenaicum*, *racemosum*, *seusanum*, *trifurcatum*, *violascens*.

Subgroup V.—Leaves the same, tips black—*S. adoxum*, *comollii*, *glaucum*, *schlehani*, *scholtii*.

Subgroup VI.—Leaves of the size and shape of Subgroup IV but of a pale or glaucous green, self-colored, with nut-brown tips—*S. ambiguum*, *beugesiacum*, *blandum*, *breviarum*, *brevistylum*, *compactum*, *decoloratum*, *juraense*, *lamottii*, *monticolum*, *obovatum*, *pallidum*, *praestabile*, *sabaudum*, *validum*.

Subgroup VII.—Plants lower than the preceding, leaves oblanceolate-spatulate, 2.5 cm. in length, 8-10 mm. in width, a pale or glaucous green without colored points—*S. laetivirens*, *pallescens*, *venustum*, *verlotii*.

Group II.—FIMBRIATUM. Plants fringed, bordered with long hairs, closer together than those of *tectorum*, those at the leaf-tips projecting in different directions and spreading out or curving occasionally on the back or on the surface of the leaf—*S. angustifolium*, *atlanticum*, *barbulatum*, *fimbriatum*, *funckii*, *piliferum*, *pomelii*.

Group III.—MONTANUM. Leaves downy on both faces, without marginal hairs and down; dwarf habit—*S. alpestre, assimile, caucasicum, flagelliforme, frigidum, marmoratum, montanum, monticulum, pumilum, rupiculum, stenopetalum.*

Group IV.—ARACHNOIDEUM. Plants dwarf, central leaves jointed at their tips by a spiderly tissue of long white threads—*S. arachnoideum, doellianum, fauconnetti, heterotrichum, rubellum, tomentosum.*

Division II.—True *Semperviva* with yellow flowers—*S. albidum, braunii, gaudini, globiferum, grandiflorum, pittonii, ruthenicum, wulfeni, zelesbori.*

Subgenus II.—*Jovis-barba* or *Diapogon.*

6 petals, 6 sepals and 6 erect carpels, flowers yellow, carpels very closely drawn together from the base to the summit, the erect and elongate hairs gradually shorter—*S. arenarium, heuffelii, hillebrandti, hirtellum, hirtum, neilreichii, stoloniferum, stramineum, transylvanicum.*

The insufficiency and the defects of this classification leap to sight. It is impossible to establish a classification on the proportions of the leaves, the flowers or the stalks, because the culture and the nature of the soil influence considerably the development of these organs. The same species, found in the same region, in a poor, dry soil, or in a rich terrain, presents, according to the supplies it finds in the soil, very different dimensions—it is not even possible to establish, as a basis, the average measurements. I have seen, in the superb garden of Mr. Bowles at Middleton House, to the north of London, clumps of our different *Semperviva* that in habit had reached proportions so exaggerated that at first sight one might take them for the Mexican *Echeverias*. They are planted in a limestone rockery, in full sun, at the very foot of the house and in a soil that seemed to me to be a rich earth such as one would have for wheat, improved without doubt by fertilizers. M. John Julien, of Geneva, has found on the banks of the London, a small river in our canton, clumps of *S. juratense* which had attained phenomenal size, because the soil in which they grew was rich in humus.

One is no more able to depend upon

the color of the leaves. It is for this reason that Baker classed *S. Juratense* among the species with self-colored foliage when they are often strongly tinged with red. Color, in the leaves, has its value without doubt, but it can not be considered as a specific character of absolute value. It is in the flower, the carpels (fruits), the inferior scales, the presence or absence of hairs, of wool or down, and the form of the inflorescence that one must make his observations. Nevertheless, by the average (sizes) of the stalks and the different organs, one comes to establish approximately the rank of the plant. Elsewhere, Baker himself, several years later, has made a new classification limited to species distributed in English gardens. Having found, he says, the difficulty that one experiences in finding one's way about in a nomenclature that is more and more mixed up, there has been produced a great confusion in horticultural catalogues. He studied, in a series of successive articles (*Gardener's Chronicle*, 1879, II, pp. 10, 38, 85, 107, 135, 166, 268, 428, 650), the different types and varieties which were cultivated then and that is the work which I have taken as the basis of my own.

Subgenus *Sempervivum* proper.

Flowers with 10–20 divisions.

I. RHODANTHÆ.

Flowers rose or red.

Group 1.—CILIATÆ. Leaves of the rosette glabrous on both faces having, when full grown, short hairs on the margins—*S. calcaratum, tectorum, etc.*

Group 2.—PUBESCENTIÆ. Leaves of the rosette downy on both faces, short ciliate on the margins—*S. flagelliforme, montanum, etc.*

Group 3.—BARBULATÆ. Marginal hairs longer than those of preceding group, those at the tips forming a small tuft—*S. fauconnetti, funkii, rubicundum, etc.*

Group 4.—ARACHNOIDÆ. Dwarf species, central leaves connected by long and tangled hairs—*S. arachnoideum, tomentosum, etc.*

II. CHRYSANTHÆ.

Flowers pale yellow, with spreading petals—*S. gaudini, wulfeni, etc.*

Subgenus *Diopogon*.

Flowers divided in six parts, erect, close to the carpels which are equally erect, flowers always yellow—*S. arenarium*, *hirtum*, etc.

One knows how certain botanists have multiplied species. Hear what M. Burnot says (*Flore des Alpes-Maritimes*, Vol. IV, p. 35):

"Nothing is easier, especially with living material, than to apprehend the numerous differences in detail which separate the 'species' from one another. By way of retaliation, the examination of the very numerous forms of *Sempervivum tectorum*, *montanum* and *arachnoideum*, both in Switzerland and in France, makes it easy to show that the forms described and illustrated do not represent the smallest part of those that can be distinguished. Among themselves they make a throng of transitional forms which are bound together without the observer coming to remark the slightest break permitting a specific distinction. Following the scale adopted by Jordan and Fourreau for the *tectorum* group, we would be obliged to create a variety or else a special species for each of the plants we have collected in the Maritime Alps. This is, in some cases, the result at which these authors have certainly arrived since, in most cases, the area of their 'species' is represented by a single locality (see the 35 species in their 'Breviarum' and the 24 figures in their 'Icones,' all growing in France and belonging in the group *tectorum*). In the Botanic Garden at Geneva, where are cultivated a considerable number of these forms, the cultivation and propagation by means of rosettes or stolons does not introduce the slightest morphological modification in the given form. On the other hand, one can frequently discover three or four different forms among the plants sprung from seed of the same stalk.

"We mention this, however, while admitting that these rigorous conclusions will not be thought to be drawn from artificial crossing, the

joubarbes being much sought after by drone-flies and bees. . . ."

The pharmacist, Martial Lamotte, of Clermont-Ferrand, is the only one among all the botanists who has best studied this genus, thanks to the fact that he cultivated the types he wished to describe. He says somewhere in the preface to his "Etudes" published in 1864, that it is impossible to study the *Semperviva* from herbarium specimens and that he has brought them into cultivation in order to describe them. The characters most important in his eyes are the form of the rosettes, greater or lesser downiness, the presence or absence of (marginal) hairs, the coloration or the form of the petals, the relative dimensions of the stamens and pistils, their pubescence, the form of the scales (bracts), their thickness and the distance between them.

As I have said before, M. Rouy has given us in his *Flore de France* an analytic key which unfortunately is not very clear. He interests himself in botanical characters difficult to make clear to common mortals and complicates matters still more by his tendency to change names so far admitted by all. Simple amateurs discover, therefore, the greatest difficulty in determining the species that they cultivate. That is why I would like to establish here a somewhat practical table which should be comprehensible to the collector in leaving to one side terms too scientific and obscure. Herewith follows (in Chapter III) the list of all the species cultivated at this time, examined for this study:

According to the title-pages of the documents (the written articles), I add here a bibliography comprising the more important works on the genus *Sempervivum*:

- J. G. Baker (*Gardener's Chronicle*, 1874, II, p. 25; 1879, II, pp. 10, 38, 85, 107, 135, 166, 268, 428 and 650).
E. Burnat, *Flora des Alpes Maritimes* (Vol. IV). (1892-1917.)

- A. P. de Candolle, Mémoire sur la famille des Crassulacées (Paris, 1828).
 ——— Extrait d'un Mémoire sur la famille des Joubarbes (*Semperviva*), (Bull. Soc. Philom. Paris III, 180, pp. 1-2).
 ——— Prodrômus (III, p. 381 and following).
 Catalogues du Jardin Botanique de Grenoble about 1860.
 Catalogue Louis van Houtte (Gand, 1885-1886).
 R. Farrer, The English Rock Garden (London, 1919).
 Fedde, Repertorium novarum regni vegetabilis.
 M. Gandoger, Novus conspectus florae Europae, Paris, 1910.
 J. E. Guettard, Mémoires (II, 1770).
 N. J. Jacquin, De Sempervivo sediforme monstroso (Miscellan. austriaca, I, p. 133, 1778).
 A. Jordan et J. Forreau, Breviarum Plantarum novarum (1868, pp. 28-46).
 ——— Icones ad Floram Europae (pp. 192-218).
 W. J. D. Koch, Synopsis der deutschen und schweizer Flora (Ed. III, Vol. 1, pp. 225-227, 1892-1907).
 Martial Lamotte, Étude sur le genre *Sempervivum* (Clermont-Ferrand, 1864).
 C. B. Lehmann & S. Schnittspahn, Flora (Raisbonne, 1855-1856) 35 species described.
 G. Nicholson, Illustrated Dictionary of Gardening (London, 1889).
 ——— Dictionnaire pratique d'Horticulture (Paris, 1892-1899).
 L. Pfeiffer, Nomenclator Botanica (1874, pp. 1134-1135).
 Regel's Gartenflora (1872, pp. 233-238).
 G. Rouy, Flore de France (Vol. VII, Paris, 1902).
 H. Schott (Oesterreiches Bot. Wochenbl. 1853, v. 3, pp. 12, 19, 28).
 L. Vaccari, Il *Sempervivum* Gaudini, etc. (Anali di Bot., Vol. III, p. 21).
 Vilmorin-Andrieux, Flore de pleine terre (Paris, 1863).

[TO BE CONTINUED]



Pearl Frazer

Ranunculus ovalis (left), *Allium reticulatum* (right)

[See page 68]

Roosevelt Cabin—II

BY FANNIE MAHOOD HEATH

Again the "Frost King" has loosened his long hold on our land and has departed for the farther north. Once again, before the curly golden-brown "mesquite" that covers the surrounding hills has taken on even the faintest tinge of green and while ghost-like snow banks still linger in shadowy places, the *Anemone patens* or Pasque Flower is unfolding its handsome bluish-purple cups from their furry wrappings. The new growth of the entire plant is covered with the softest, silkiest, silvery-green fur imaginable. One of the many Indian names for this plant is "Prairie Smoke," and it is very appropriate as the immense colonies which bedeck the sunny slopes could very readily be mistaken for very blue smoke. Growing from four to six inches high, it is our harbinger of spring, and at Roosevelt Cabin it is planted in little colonies wherever a group will add to the naturalistic setting.

In the space devoted largely to the various varieties of cacti, only such plants as will stay "put" and will not grow tall enough to in any way hide the ragged outlines and beauty of the cacti, are used. These are placed mostly near the walks as I dislike cacti too near places where tiny tots may get scratched by them. Here is where you will find both *Phlox hoodii* and *douglasii*. These are much alike in general appearance. *P. hoodii*, or Moss Phlox, the dwarf of the two, is only from one to two inches high and has snow white blossoms fully a half inch across and so freely produced as to almost hide the grayish-green, awl-shaped leaves. Both have very long roots that will go down to moisture, thus making them very drought-resistant. Both are readily transplanted if kept slightly shaded and very wet for about two weeks after being reset.

Here, too, are clumps of the very early and very dwarf alliums. I am not certain as to just what varieties these are, as our North Dakota Flora lists only two kinds and I am certain we have at least four. These little alliums have round, short, very green foliage. Some have oval to almost round clusters of buds, encased in bright red sheaths, while others have long, narrow, rather pointed buds with a pale yellow sheath. These two are very attractive and as they come so very early they make bright little patches of prettiness, sometimes for two or three weeks before the sheaths burst, disclosing the pearly white buds that are followed, a week or two later, by the white, tiny, lily-shaped blossom clusters. They are very dwarf, only three or four inches high. *A. reticulatum*, with flattish leaves and oval, white-sheathed buds, comes a little later, grows taller, and has larger blossoms. All are very easy to establish and my young grandson says the bulbs are very useful to eat to make the teacher mad.

Near the entrance walk, and where they will eventually trail over the stones that edge the walks, we have used the Trailing Cedar, *Juniperus horizontalis* and *Arctostaphylos uva-ursi* (bear-berry or Kinnikinic). (This word "Kinnikinic" is used for the name of many plants and means simply that they were used as smoking tobacco by the various tribes of Indians.) This charming little creeper is, in my estimation, one of the handsomest rock garden plants that we have as the small leaves are thick and glossy and being evergreen makes them still more desirable. They turn a delightful shade of red in winter. This coloring with brighter red berries, makes them very attractive during the winter months. The Juniper is a splendid companion plant, as that too trails

over the ground and the blue berries, with their whitish bloom, are surprisingly large for the plant. Both grow to perfection out on some of the high buttes where the sun beats down upon them through our long, summer days and the winds sweep over them, for they seem not to mind it in the least but to hold their freshness regardless of climatic conditions. I was told many times that these plants could not be transplanted. Just the same they seem not to have found it out, for they are flourishing not only here at the cabin but in my home grounds as well.

A little farther back from the walk we have planted the Dwarf Sand Cherry, *Prunus besseyi*, and *Rhus trilobata*, the Fragrant Sumach. This dwarf cherry is a real treasure as it will blossom and produce an abundant crop of cherries when less than a foot high. The true *P. besseyi* rarely grows over three feet and I have seen a whole hillside carpeted with these little shrubs and the Trailing Cedar. None of the cherries were over a foot high, yet at the time I saw them they were snowy white with blossoms. The fruit, while not of the best, is relished by both children and birds. These cherries root-spread somewhat but not nearly as fast as the fortunate possessor would like them to do. The fall coloration of both these shrubs rivals even the Scarlet Maple in gorgeousness of display. The Fragrant Sumach will grow to three or four feet high but may be kept at less than two feet and yet produce an abundant crop of bright red berries that are so freely produced as to almost hide the branches. Comes into flower very early in the spring and has attractive three-cut, lobed leaves.

The bright yellow to orange blossoms of *Fritillaria pudica* are here among the cacti. This little plant is sometimes called the Grass Widower and from his appearance he seems to be taking it harder than many of them do. The flowers come from scaly little bulbs and spring into bloom as if by

magic. They are also sometimes called Snow Lilies from this habit of blooming as soon as the snow is gone. The foliage dies down early in the season so the cactus helps greatly in their not being destroyed. They grow from three to eight inches in height.

Close to the walk and draping the stones is *Astragalus hippoglotis*. This is a very satisfactory rock garden plant as it blooms for a long time and the foliage is pleasing at all times. While it root-spreads to some extent, it does so in a way that only adds greater beauty to its surroundings. The blossoms range from a deep purple to a pinkish purple, in varying shades, and with occasionally a pure white. It grows from three to five inches in height. Here, too, you will find *Viola nuttallii* or Prairie Violet, as it is sometimes called; a winsome little bit of brightness from two to three inches high with arrowhead leaves and brightest golden blossoms, prettily penciled with reddish chocolate. In this, too, the foliage dies down as soon as it has ripened its seeds. Not difficult to grow in any well-drained, sunny spot in sandy soil.

Towards the south walk are *Lomatium foeniculaceum* and *L. orientale*. Both blossom very early, ripen their seeds and die completely away, leaving no trace of their whereabouts until the following spring, when they are sure to come back to greet you among the very first arrivals. *L. foeniculaceum* is the prettier of the two as it has leaves finely dissected into narrowly linear to filiform segments (as the botanists would say it), of a vivid green color, and bright yellow blossoms. The cut will give an idea as to the size and shape of both flower-cluster and leaf. Now you must use your imagination to picture what a well-grown plant would be like when there are so many of these leaves that they will form a mat perhaps two inches thick and a foot or more across with several flower clusters resting lightly upon them. I think them very, very lovely, but perhaps I am

not a good judge. *L. orientale* has far less leaves, bipinnate, the segments mostly pinnatifid and marked with small splashes of dark brown. The flowers are either white or light pinkish. The seeds of this little plant were held in very high esteem by some of the "Plains Nations" as a love charm, for they believed that if either man or maiden would rub their palms with this seed and could then shake hands with the object of their desires, they would accede to their wishes. Now who can say that this be not so, for I had been gathering these seeds and my palm was still laden with this mystic power when I first shook hands with those in charge of the Capitol grounds that did not want us to plant wild flowers.

Near the fence, and not far from the entrance, is a planting of *Rumex venosus*, or Red-seeded Dock. During the time this plant is at its best there is no plant in the entire collection about which so many ask "What is this" as this same plant. And a strikingly handsome thing it is with its four- to eight-inch racemes of papery seed capsules of from old rose to a light red in color, some of them so large that they can not be covered by a silver half-dollar, though these are exceptions. They keep in perfect condition for weeks and are also useful to add to winter bouquets. The blossoms are inconspicuous and the plant rather unattractive, yet for a gravelly ledge to be seen from some little distance they are hard to beat, are very easy to grow and have no special requirements.

Not far from these is a planting of the Orange Puccoon or *Lithospermum canescens*. These grow from four to eight inches tall and have from one to a dozen leafy stalks, topped by the bright orange funnel-shaped, five-lobed blossoms that continue to open for a few weeks, over the grayish-green foliage.

The Lemon Puccoon, *L. linearifolium*, while not so showy, is to my mind the more desirable of the two. While

it does not have as many blooms, they are larger, of a soft lemon-yellow color and are prettily ruffled. As the name implies, the foliage is very narrow and of a light green shade. These have long, carrot-like roots and both have red juice that was much used by the Indians as a dye for their ornaments. The name "Puccoon" is the Indian name. This *L. linearifolia* forms splendid mats a foot or more across and later has many smaller branches that bear a second crop of smaller blossoms, followed by silvery rice-like seeds that stay on the plant throughout the fall and winter months. Both are easy to grow and make good rock plants.

I note I have neglected to say that the seed capsules of *Rumex venosus* are three-cornered in shape and are made of three rounded, papery parts, joined together in the center, thus forming the three wings, veined with a darker shade of pink. From these veinings the plant derives its name.

Of all the plants which adorn our prairies none appeal more strongly to me than does the little Mesquite Grass, or Bunch Grass, *Bouteloua oligostachya*.

In another section, devoted largely to plants suitable for rock garden culture, are colonies of other early blooming plants intermingling with those that bloom in midsummer as well as late in the fall, thus keeping all parts of the grounds bright over as long a period of time as possible.

Large quantities of *Artemisia frigida* or Silvery Mist have been used, as the silvery green, finely cut foliage keeps very fresh and pretty throughout the entire year. *Oxalis violacea* or Pink Sorrel with its many bright pink blossoms is especially pleasing when planted with this artemisia. *Mertensia lanceolata* with sky blue blossoms and deep pink buds is also very captivating as a companion plant. Unlike the mertensia of the East that does its best in moist shade, this mertensia flourishes in dry, sunny, exposed places and is of the easiest possible culture. It grows from five to ten



Paul Frazer

Mertensia lanceolata, *Oxalis violacea*, *Viola adunca*, *Allium reticulatum* (background)

inches high and makes splendid clumps in a very short time. *Viola adunca* is another charming mite less than four inches tall and producing quantities of light violet darker centered blossoms over quite a period of time.

Ranunculus ovalis or April Buttercup responds whole-heartedly when given a chance to show just how lovely it can be. Out in the wild it is difficult to find a plant with a half dozen blooms open at one time. In the garden sometimes as many as fifty are out at once and they blossom for months.

Geum triflorum or Three-Flowered Avens is a cheery little plant of early spring with perennially green leaves of pleasing pattern and gaily nodding red blooms in clusters of three that are followed by plumose seed heads

of a soft purple shade. These give the plant many of its common names, as Old Maid's Frizzes, Old Man's Whiskers, Torch Flower, Apache's Plume, and the blossoms have earned for it the names of Prairie-on-Fire and Strawberry Plant. Any well drained sunny spot will please it.

Astragalus crassicaarpus is another noticeably good plant with good clusters of inch-long, pea-shaped blossoms in combinations of white and lavender, rosy purple, deep pink, a pretty shade of red, also purple. These are followed by clusters of transparent soft green, splashed red pods an inch in length. These are responsible for the plant being variously known as Buffalo Peas, Indian Apples, Squaw Plums, and other names. Prepared as asparagus and served on toast before they get



Pearl Frazer

Pentstemon albidus

[See page 73]

too old these make a very good substitute.

In another large bed filled largely with later blooming, stronger growing plants *Cerastium arvensis* is given full sway and adds much, with its clouds of snowy half-inch wide blossoms for many weeks. After the blooms have faded the stems are all pulled up. This does the plants no harm and very soon a new carpet of living green covers the ground with an occasional blossom in late summer and fall.

It would take entirely too much of this valuable space to even mention the half of the early spring flowers, but I can not resist the urge to mention our four early pentstemons, three blue in color, *acuminatus* with gray green glossy foliage and often with a tinge of pink in throat of sky blue blossoms, *cristatus* with dull green leaves and orange crested tongue, *angustifolia* with dark green, very narrow leaves and intensely blue blossoms, and *albidus* a very pretty white one.

Novelties and Specialties

BY SHERMAN R. DUFFY

With the world well combed for plants available for our gardens, the introduction of a new genus is a rarity and a new species is an unusual event. Seedsmen are somewhat put to it each year in making up their annual lists of "Novelties and Specialties" to find anything worth while that is really new. They are forced to depend for the most part on new hybrids and selected strains and varieties for their stock of introductions.

Two comparatively new genera, so far as gardens are concerned, appear in the lists this year. These are the venidiums and the ursinias, one species of each. They are South African composites. The former is an ally of the aretotis and the latter, although rare in cultivation, has been known as *Sphenogyne* and is still so carried in European catalogues. There are a large number of species of each genus, according to botanists, some 18 of venidium and 60 of Ursinia, and European periodicals say there are valuable types yet to be introduced.

Ursinia anthemoides and *Venidium fastuosum* are the new offerings. Trials of the former as an annual have been reported as unsatisfactory as it failed to come into bloom. The latter, a colored plate of which was printed a

few months ago in The Gardener's Chronicle (English), comes with a reputation as a fairly easy doer. One venidium was introduced some seasons ago as a sterling novelty, *V. calendulaceum*. This is now known as *Arctotis calendulacea*. It resembles a single calendula but never made its way. These two newcomers have orange or yellow flowers with a dark corona about the disc. They seem to be the real strangers this season. If we may judge of the new venidium by the old *V. calendulaceum*, it will revel in hot and fairly dry soil.

We have learned to look forward to anything from the Allwood Brothers, British pink specialists, with much anticipation. Their Allwoodii hybrids of *Dianthus plumarius* and the carnation are now well established and much admired inmates of our garden. Their Alpine-Allwoodii hybrids gave some delightful little low-growing pinks for rock gardens with much more vigorous constitutions than the Alpine species often possess and have proved very fine subjects.

The latest Allwood creation is a Sweet William hybrid with the Allwoodii pinks introduced as Sweet Wivelsfield. This writer has no visual knowledge of this pink, but it is re-

ported by American seed experts who have seen it as a very fine introduction in the nature of a bunch-flowered annual pink, but a perennial if not allowed to seed. The individual flowers in the Sweet William color range are reported as of good size.

With the introduction of the Sweet Wivelsfield pink we have a revival of the old so-called annual Sweet William, *Dianthus atrococcineus*, a fine pink, blooming the first year from seed, but like most of the annual pinks, mildly perennial. Its intense crimson blooms are attractive but the English Crimson Bedder, a hybrid pink introduced a few seasons ago and now offered in American lists, is larger flowered, more velvety and a better plant. It is a glowing bit in the garden and I have seen clumps of it used to brighten up the dull season in rock gardens with fine effect as it is a rather dwarf grower.

A beautiful new pink is Highland Queen of a brilliant, glittering scarlet tone with a contrasting white center, that came to us from England last year. It gives bloom the first year if sown early and is of the plumarius section but of shorter stem and more compact growth than most of this type. Of sturdier growth in rich deep reds is another plumarius variety, Ipswich Crimson, very fine but not as brilliant as Highland Queen.

Calendula Radio in the writer's garden last year and as seen in another garden did not prove as exciting as descriptions would indicate. It is quilled but did not develop the globular form as distinctly as photographs abroad show it. It is inferior to the Ball types.

Gardeners are fairly familiar with the so-called double perennial coreopsis which with fuller flowers is an improvement on the old *lanceolata*. A new form, *Coreopsis auriculata superba*, flowered by the writer last summer, is interesting as indicating the possibility that it may be the start of the development of the coloring of the annual calliopsis in the perennial form. It

is a rich orange yellow, with a brownish red blotch at the base of each ray flower, of varying size and depth of color in different plants. It has not the fine stems for cutting of the old perennial coreopsis but approaches the shorter stems and more branching stalk of the calliopsis. It is a showy garden plant of brilliant coloring. From Australia comes another selected type of perennial coreopsis, Mayfield Giant, reputed to be the largest and finest of them all.

If it is comparable in size to the huge, glittering white daisy, *Chrysanthemum maximum*, Mayfield Giant, it will be a real addition. This beautiful daisy develops a stem rot at the base of the stalk that has carried it off for me. This seems a weakness of many of these finely bred daisies. Some of the Shastas are likewise affected and die without formality or apparent good reason.

Among the very fine developments in hardy perennials now quite generally listed among novelties are the Isaac House hybrids of *Scabiosa caucasica*, probably not hybrids but a selected strain. They vary from very pale to deep lavender blue, large, of exceptionally fine form, but this is not a perennial for every one as it must have a good lime soil to be perennial or give typical bloom.

At least two packets of seed of this plant should be purchased as the germinating quality of the seed is very low. I had only six plants from a packet and got none at all from seed I gathered myself. *Scabiosa columbaria* did not prove hardy with me.

The greatest thrill of the season came to me from a "specialty" so old that it is new. This is the listing of Johnny-jump-up seed. There has been a revival of interest in violas due to the growth of rock gardening interest and these dainty "none-so-pretties" are a welcome revival. They are quite in the nature of an authentic antique in the plant line.

Seed of the much sought after Viola Apricot is now offered by

American dealers. This is one of the most beautiful of the viola hybrids but it has been difficult to obtain, as often the pansy Apricot Queen was sent instead of the true Apricot viola. The seed takes its time about germinating and there have been many failures to obtain any plants. Continuous moisture and drainage and cool quarters are required.

A new giant trollius, *T. ledebouri* Golden Queen, sounds most alluring. These handsome giant buttercups are growing in popularity but it is useless to try to grow them in dry soil. Those who have tried to grow trollius from seed know that it will not germinate for a year after it is sown. The seedsmen declare that *T. ledebouri* germinates promptly. This is a case where seeing is believing but I am willing to make the trial. The globe flowers like moist quarters. They suffer badly in times of summer drought if not given an ample supply of water.

And there are new gentians, notably *G. hascombensis*, a hybrid, and the famous *G. farreri* now in our seed lists. Any one who can grow gentians from seed or get them to come up may consider himself both skilled and lucky. They will take their time—I've seen two or three come up—and are tiny at the start and stand still a long time, so watchful waiting is the policy with these plants.

Any new Iceland poppy awakens a quick response from me. They are delightful to romp all about the garden. They seem to me most welcome used as late season annuals, scattering the seed while the ground is still frozen. They will then come into bloom in the fall and fight a game battle with frosts. The beautiful Coonara pink is now well known. A series of cream varieties is the newest offering. The clear yellows are beautiful for cheery late fall bouquets and seem to give more abundant bloom than other colors.

Veronica Royal Blue gets a call as a novelty. This is listed as *Veronica teucrium* Royal Blue and also as *V. amethystinum* Royal Blue.

It is no stranger to rock gardens, being one of the showiest of the speedwells and quite as valuable for the border, growing a foot in height and giving a mass of intense blue in early June. It is easily raised from seed and is very much worth while.

Some very fine strains of perennial gaillardias are offered. Of these I have found Dazzler to be all that its name indicates, a magnificent flower on three-foot stems with brilliant red center and the typical gold edging. The petalage is full and the flower of fine form and the largest flowered of any of the gaillardias I have tried.

There is now a very fair list of primula seed offered by American seedsmen who until very recently forced us to go to Europe to get our primroses. The giant *Florindae* is offered. It is one of the easiest to grow. English seedsmen offer a series of the dainty and beautiful *Primula microndonta alpicola*, the yellow form of which is known to rock gardeners and primrose fanciers. Pink, claret, white and violet are offered in the new range. This will tempt many.

Meconopsis baileyi, the giant blue poppy from the Himalayas, is still offered. It is a difficult plant and I have yet to learn of any success with it in the Middle West. Germination has been obtained liberally but the plants haven't survived infancy.

Tucked away in novelty lists of some of the seedsmen is seed of *Lilium willmottiae*. This is well worth buying. This dainty lily, a miniature vivid orange red with recurving petals, grows very easily and really does blossom the second year if given a good start. The regal lily is said to do so but it is better to depend on the third season.



Gartenschönheit

Forrest's Field Photograph of *Roscoea humeana*

Roscoea

Gartenschönheit, July, 1929.

BY FRITZ LEMPERG

The very peculiar looking but extraordinarily beautiful herb, *Roscoea humeana* belongs to the small, specifically tropical family of ginger plants—Zingiberaceae—which are placed between the bananas and the cannas and so are fairly closely related to the orchids. Of this family only a few genera are useful in temperate regions and particularly *Cautleya lutea*, the *Hedychium gardnerianum* of gardens—a species which like canna is well adapted to garden purposes—ascending to 2200 m. in the Sikkim-Himalayas, and the species of *Roscoea* which in the Chinese Alps extend still further into cold climates and prove rather desirable

for open air cultivation in Central Europe.

The illustrated plants, whose flower stalks about a span high overtop the somewhat longer, flexible, shining green leaves, flower in midsummer with flowers of a beautiful purple color playing somewhat to wine red. The helmet-shaped upperlips of the flowers have a diameter of 3-4 cm.; are also very conspicuous for the size of the plant and curve in a beautiful arc over the smaller petals and stamens. The seed capsule, as in crocus and colchicum, is buried deeply between the enfolding leaf sheaths. *R. humeana* is much more beautiful than the longer cultivated *R. purpurea*

*Gartenschönheit**Roscoeae humeana*

whose smaller flowers are in poor relation to the abundant foliage.

From an entirely different location comes the indescribably tender yellow *Roscoeae caudileoides*. Before the flowers appear one might think it to be *Iris sibirica*. In its asymmetrical flower shape it is much more like a gladiolus, but in older plants a greater number of stalks about 40 cm. high spring up which at blooming time stand well above the foliage and bear 6-8 flowers arranged laterally. According to Handel-Mazzetti in his

botanical exploration in Yunnan, I understand that this plant occurs as well in lilac and mixed colors. They are found there on limestone formation. In cultivation *R. caudileoides* needs no more than a sunny position in heavy loam soil with under drainage of limestone rubble. *R. humeana purpurea*, and perhaps *R. sikkimensis* as well, belong, however, in warm positions in the Alpine or rock garden in deeply worked fertile soil, well mixed with leaf soil (an addition which, except for mountain plants in general, is not

*Gartenschönheit**Roscoeae cauleoides*

always to be recommended!), not too sunny, and develop there their extraordinary beauty; for they must be considered, from their occurrence in their native home as plants of the moist edges of mountain forests and underbrush, somewhat like our native lady-slippers. When one has secured in autumn the collected, not too-promising looking roots—possibly from Van Tubergen, Haarlem—one should hold the plants over the first winter in pots in a cold frame. In spring plant them, without disturbing the balls of earth, at

a proper depth in the permanent position where they can then develop happily. Concerning lime in the soil, they are indifferent. A covering of a little mound of dry sand and a few branches serves to protect them through winter hardships. All push up late and disappear after ripening the seed. *R. cauleoides* this year was particularly late, but developed very quickly and flowered well as the picture shows. Like the others, *R. cauleoides* is easily and freely raised from seed. Such is available

from Frickart, Stafa in Zurich, and Thompson & Morgan, Ipswich, England. The family was named after Roscoe, an English scholar, who in 1828 published the first monograph "The Scitamineae with a Fertile Stamen," also the then known Zingiberaceae and Cannaceae. Experiments with these beautiful and not particularly difficulty cultivated plants will reward earnest plant lovers greatly.

NOTE.—Seed of roscoeas may be sown any time during the winter in a cool green house where germination will take place fairly rapidly. The small plants grow without much difficulty and produce by the end of the first summer, small plants with several leaves and three or four slender but somewhat fleshy roots, As soon as the leaves show signs of ripening the

amount of water should be curtailed and the plants allowed to become dormant. They should be kept in the pots, however, and not allowed to become entirely dry. The following spring they may be shaken out of the pans and either repotted in larger pots or lined out very carefully in a frame.

There is as yet very little data on the range of hardiness of these plants in this country. One report from Michigan states that so far they have not been winter hardy there. A report from Pennsylvania also records an eventual loss, but since *Choysia ternata* has survived in this same garden, one suspects that some other trouble may have taken them off. Will any member of the society who has had any experience with these plants, whether successful or otherwise, please send in a note to the editor. B. Y. M.

A Shopper's Guide

After a time one is able in reading catalogs to tell at a glance what is likely to be on the very next page after he has seen the first page or two, so that he feels rather more like a proof-reader than a would-be horticultural guide, but every now and then he comes a cropper on some perfectly unexpected finding.

Imagine finding *Iris alata* unexpectedly. The reader has not seen this in an American list since "before the war." It kept company with several rarer forms of *Lilium auratum*, *Nerine japonica* and *Tritoma rufa*. Only the fact that the list comes from New York City makes one wonder if the supplies will all be exhausted.

A very slim folder offers *Dipelta*

floribunda that puts the much talked about kolwitzia to shame on occasion; *Indigofera kirilowi*, a very interesting shrub with delicate locust-like leaves and racemes of rose pink flowers, and *Sophora viciifolia*, which is a spiny small shrub with even more delicate compound leaves and smaller clusters of lavender and white pea-shaped blossoms. The indigoferas should have more attention, for although they do not bowl one over like the omnipresent *Hydrangea paniculata grandiflora*, they make a welcome addition to the summer border before the hydrangeas begin. In severe climates they are often killed to the ground but come again in ample time to flower well.

In a list from Long Island one finds two corylopsis species, *pauciflora* and *spicata*, that are worth a try if one has a large shrub walk and an interest in the very first things that flower in the spring.

With the thought and sight of *Iris reticulata* in mind one jumps to see a list with *histrion*, *histrionoides*, and *vartani* listed even at rather prohibitive prices.

From California to Florida is a long jump, but in a list from the latter State one calls the names of two native azaleas that should be remembered by gardeners not too far north, *austrina* and *serrulata*, the first a southern representative of the series in which *calendulacea* and *speciosum* are the more northern members, and the latter a late flowering form.

In a list from New Jersey one finds another indigofera, *potanini*, this time of very different and more shrubby growth than *kirilowi* mentioned above, and with many more, if smaller flowers in the racemes.

Possibly the most interesting list of all is a list from Minnesota in which are offered seed of various gladiolus species. If ever there was an opportunity for a garden club to get to work on a noble and high-minded enterprise, here it is. At the present time, no one can look through a collection of American trade lists without being appalled at the number of catalogs from dahlia, gladiolus and iris dealers all as much alike and as ubiquitous as filling stations, offering standardized stuff at various prices to fit the purse and grade. Here, however, is a catalog offering seed of the species from Africa, a list almost copied from a list from South Africa direct, so that the American can, if he or she will, get with a minimum of effort the charming species that in many cases are far lovelier than any pampered child of the garden. There will be difficulties in the cultivation undoubtedly, but think of the pride of achievement in the end. For the less enterprising, there are bulbs of a few species already

grown and a list from Ohio offers bulbs of one or two more, but in neither case is the species offered the best that gladiolus can do for us.

From a nursery in Colorado one may get roots of *Tritoma*, Lord Roberts, a variety that is by far the most gorgeous yet seen by this shopper. On the coast it is superb, but even here in the East it makes a mighty sheaf of foliage and sends up in mid-summer a magnificent burst of bloom, red and yellow to be sure, but of the clearest, most brilliant coral red quality. The memory of a man-sized clump against a stucco house with a dozen or more ruby throat hummingbirds about it is one of the garden pictures cherished from 1929.

In a lily list from Oregon, in addition to bulbs of *browni odorum*, *philippinense formosana*, *sulphureum* and *wallichiana*, one finds seed of alstroemerias and of *Xerophyllum tenax*. Roots of the former from California planted last autumn seem to have survived the winter with a drop to six below zero, rather a trial for a late Californian, successfully if not robustly. The roots are wretched to ship as they are brittle and easily bruised and broken, but the seeds seem to germinate well and the little seedlings push along rapidly. As the plants flower in July they make one more valuable member of the summer border, especially for those of us who live far enough south to feel the period of midsummer dormancy. The *xerophyllum* is a striking native from the Pacific Northwest and should be tried from seed as well as roots.

As a parting reminder, try *Sisyrinchium grandiflorum* from Oregon also. Do not be alarmed at the roots that look unbelievably dead on arrival in the fall. They are alive and push into growth with the first decent weather in March and flower almost immediately, huge (for the size of the plant) deep purple bells of gossamer transparency, that look quite unlike the blue-eyed grasses of this part of the world.

A Book or Two

Flowers and Trees of Palestine, by Augusta A. Temple. The Macmillan Company, New York, 1929. 148 pages, illustrated. \$2.40.

Whether one be a botanist or only an ordinary mortal, temporarily a sojourner in that small but fascinating portion of the eastern Mediterranean which has so often witnessed the passing pageant of history, the ever-changing color pattern of the Oriental floral carpet there furnished can not but please. In a land rugged and, in parts, grim, the contrasting softness and delicacy of flowers is peculiarly welcome and refreshing. While it is not necessary to know names and identifications to enjoy these flowers and trees, it does add much to one's pleasure. In her "Flowers and Trees of Palestine," Augusta A. Temple has provided the traveler to that country with a welcome and useful handbook. It is of a size to slip into a coat pocket when starting for a ramble, it is light of weight, and convenient in arrangement. Its four chapters divide the plant groups in an interesting manner—(1) flowers and (2) thorny plants—and one appreciates the many biblical references to thorns when traveling in that country; (3) tropical and alpine plants—reflecting the range in this small land; and (4) trees, of which there are all too few in a land where the sun shines so diligently. Through these chapters run chatty and entertaining explanations concerning just which plants were referred to in biblical passages. These accounts, together with the descriptive notes which they include, are really of more interest to the layman than the long alphabetical and descriptive list following the last chapter. This list is designed to meet the needs of the initiated plantsman. The glossary of some common terms and flower descriptions is a gentle reminder and aid to those whose botanical memories have rusted

a bit through disuse. Twenty-nine colored plates and a colored frontispiece help not only the fortunate Rambler in Palestine but also him who visits the country through the medium of books. It gives a colorful glimpse of Palestine's plant treasures.

Woven indelibly into the pages is the part plants have played in the lives of biblical peoples. They have been of unusual importance, because of the barrenness of much of the land, hence the grateful appreciation for shade, beauty and refreshment. Those who have lived in desert regions understand this well. This little volume should be included in one's preparation for a visit to the Holy Land, whether such travel be actual or of the fireside variety, comfortably ensconced in an armchair.

K. A. R.

Cauliflower and Broccoli Culture, by A. G. B. Bouquet. Orange Judd Publishing Co., New York, 1929. 125 pages, illustrated. \$1.25.

This volume covers the ground quite thoroughly, and will doubtless be of considerable help to the reader who expects to grow cauliflower.

As would be expected from the author's experience, the Pacific Coast cultures are more fully treated than those of the Eastern Seaboard. Probably the point of greatest weakness is his systematic treatment of the subject. One would get the impression that broccoli is quite distinct from cauliflower since one is "*Brassica oleracea botrytis cauliflora* DeC." and the other is "*Brassica oleracea botrytis cymosa* DeC." Yet the Umpqua River product on which the broccoli end of the book is based, is all sold and eaten in the East as cauliflower. There is no adequate treatment of the sprouting broccoli cultures which have recently been expanding so rapidly.

The book has a number of repetitions, and there are obscure para-

graphs. The writer's experience as a pedagogue weighs heavily on him, partly shown by his use of the formal category of elements to be discussed, numbered 1, 2, 3— There are 23 of these categories. This is, of course, a very effective method of discussion.

D. N. SHOEMAKER.

Sweet Potato Production and Handling, by Homer C. Thompson. Orange Judd Publishing Co., New York, 1929. 127 pages, illustrated. \$1.25.

The "Library" in which this book is included is advertised on the cover of this volume as being written to "show you how to raise bigger and better crops—better your condition—increase your efficiency—add to your income." With these objectives in view we should expect it to be concise, complete and clear.

The longest chapter is on "Varieties and Improvement." In this it is surprising to find eleven pages devoted to a very artificial system of group classification. Since this is not accompanied by descriptions it seems superfluous. There are fairly full descriptions given for nine of the important varieties. Although 44 varieties and 66 synonyms are named, there is a plate and two pages of text given to a variety called "Haiti," which is not included in the classification, and for which no description is given.

Under selection, vegetative selection is recommended though no results are promised. Aside from helping in the elimination of disease from planting stock, and the possible change in the color of the skin of the roots, there seems to be little that can be promised from clonal selection.

On page 94 strong disapproval is expressed for any storage house the floor of which is on or below the surface of the soil, but on page 106 directions are given for the construction of such a house with apparent approval.

Nowhere is an attempt made to

tell the reader whether it will pay to grow sweet potatoes, nor what it will take in expense and labor to produce a crop. This is difficult information to give, but the desire for such knowledge will probably be uppermost in the mind of the reader.

The style is often crude, as on pages 43-49 where the words "plants" and "planting" are used 70 times in 207 lines. *Ipomoea* is used with two spellings, and the reader is advised to use "mecuric" chloride.

Yet in spite of these very obvious shortcomings the reader will get some good advice on culture and marketing and may hope to "better his condition—increase his efficiency—add to his income."

D. N. SHOEMAKER.

Lilac Culture, by John C. Wister. Orange Judd Publishing Co., Inc., New York, 1930 123 pages. \$1.25.

A brief and elementary review of some of the more important garden kinds of lilac, presented in such a way as to help the beginner to understand something of the beauty of the lilac and to encourage every one who has a small piece of land to plant at least one lilac, is the avowed purpose of the book. All the points important to the gardener are happily treated upon and the illustrations are both attractive and convincing.

Everybody's Garden, by Frank A. Waugh. The Orange Judd Publishing Co., Inc., New York, 1930. 396 pages, illustrated. \$3.50.

Other writers have covered the ground before—the familiar, well-trodden garden areas of the "man-on-the-street"—but probably no one has touched the subject with as vital a spirit as has Professor Waugh in this volume.

Here the amateur will find almost all of the things he should know first and they will be pointed out by a singularly gifted instructor and guide. The more advanced amateur will find, as well, an interesting presentation

influenced by the point of view of the author, who seems to suffer from the delusion that the man-in-the-street may be led to discover that gardening in all its many forms may open the door on untold riches of life and living. God grant he is right! At any rate excellent text and charming pictures should lure the reader along, far past the hideous and most unpleasant-to-hold cover to the volume.

How to Grow Roses, by Robert Pyle, J. Horace McFarland, L.H.D., and G. A. Stevens. The Macmillan Company, New York, 1930. 210 pages, illustrated. \$2.00.

A thoroughly competent, compact and unexciting handbook giving the last-minute advice on the subject named in the title. To the beginner it will be indispensable until its next edition appears, by which time he may have his own ideas of "How to." The many illustrations are excellent, except perhaps the colored plates, that almost without exception are hard in color and "catalogish" in quality.

The Pennsylvania Horticultural Society, 1827-1927, edited by James Boyd. Printed for the Society. Philadelphia, Pa., 1929. 510 pages, illustrated. \$6.00.

This is an extraordinary book that should be read by every person connected with horticultural organizations, particularly if he can keep from a too reverent reading. It is both an inspiration and a warning; a record of achievement and of prodigious marking of time.

The book has been divided in a chronological fashion with a first chapter covering an introductory period, 1681-1827, to give the setting leading up to the foundation of the society, and a series of chapters following that build up a picture of the society and its activities as affected by the social and economic conditions of the times,

with an interesting bit here and there as to society finances. It closes with an appendix somewhat over 100 pages in length in which are gathered all the final records that should be kept in a volume of this kind.

No thoughtful person can read such a text without great respect and admiration for an organization that has maintained itself beyond its century, triumphing over the passing of both men and their businesses, in the continued service of horticulture in our country and for Pennsylvania in particular.

Our Wild Orchids, by Frank Morris and Edward A. Eames. Charles Scribner's Sons, New York, 1929. 464 pages, illustrated. \$7.50.

This is a book that all gardeners should read whether they mean to be concerned with native orchids or not, and in spite of the fact that it is not a garden book in any sense of the word.

Quite aside from the exquisite pictures that introduce the reader to many beauties of form and pattern, the text is written in such a way that the reader is fired with like enthusiasm. The present reviewer is in no position to offer critical comment on the facts presented, but as he reads page after page of vivid text, by no means confined to orchids alone, he would be willing to pardon any number of errors, assuming that specialists should discover any, for the sake of what is here.

NOTE.—The review of *The Revised Check List* published by the American Iris Society has been held over until the next issue. Contrary to report this book is more useful to the specialist than to any one else, and yet the great hue and cry seems to come from laymen or commercial people. Perhaps by July it will be safe to point out some of the major excellencies of the book and some of its amusing discrepancies.

The Gardener's Pocketbook

A LUCKY PIECE

To you comes each quarter this magazine of your Society, filled with exceedingly valuable information, timely suggestions, useful data—gleaned from far and near by the best in their particular fields. It is not an easy task to gather the information which is presented to you in each issue and which shows the heartfelt interest which our editor gives to the wonderful work which the Society and the Magazine are performing.

Nor is it easy for this department to entice the trade to speak of their wares through our advertising columns, which must primarily be of such volume so as to carry some of the burden of the expense of publication. I could talk to prospective advertisers until a one-year-old century plant puts forth its first bloom relative to the wisdom of telling you their story through our columns, but unless you, as members and readers, cooperate to the extent of giving some of your patronage to our advertisers, the results of this department will be wasted.

I have asked Mr. Morrison for space in his columns to set forth this appeal to you. You are all interested in the success of the Society and the continued growth of the Magazine, so let's all get together and cooperate to the extent that our advertising columns will vie with our reading matter. PATRONIZE OUR ADVERTISERS.

J. STEALEY ELMS,
Advertising Manager.

TEN MONTHS CONTINUOUS BLOOM OF IRISES

Having expressed the opinion with great assurance "that in the greater part of North Carolina and Tidewater Virginia, irises would bloom for ten months of the year, beginning in February and continuing through November," but finding no one in

those sections who made known their interest in the subject, it behooved me to see if the ten months continuous bloom could not be secured in central Virginia, where the temperature is often low with chill winds and not very much snow as protection.

We had with the first bloom of the pumila in March on through the dwarfs, the oncocyclus, of which *I. susiana* was the best known, the regelio-cyclus, those fascinating hybrids, the intermediates, the germanicas, the tall bearded, a great family of many novelties, the beardless, with the sibiricas, *orientalis*, spurias, including also many species (and hybrids) from our own country and other countries, with the Dutch, Spanish and English irises interspersed, the Japanese and the charming *Iris dichotoma*, carried on until the chance blooming of the bearded varieties continued the pageant through the spring, summer and fall months. This fall blooming is now assured through the introduction of the real fall blooming varieties of bearded irises.

So far so good, but there remained November and February, both rather appalling. For these months *Iris stylosa* and the little bulbous irises *reticulata* and *persica* were selected to try out. Before this, *I. stylosa* had interested me, but there had been only a bloom or two obtained in March, while my object was to secure blooms in November, as the little bulbous irises were spring blooming. A rather strenuous summer treatment was tried. The result with most clumps was nothing more than a thrifty fan growth, after which a mulch of well rotted manure was applied as a protection against winter killing. However, the clump of *I. stylosa* chanced to be near some chrysanthemums, which were being fed up in an effort to bring into early



U. S. Department of Agriculture

Viburnum fragrans
F. P. I. 57005

[See page 86]

bloom, so had the advantage of the August fertilizing, watering and later regular applications of liquid manure.

Perhaps it was the combination of the treatment and a warm November which produced a nice little crop of bloom stalks which continued until freezing weather. Encouraged by this, the next year the same treatment was given with the prospect of an equal success which was truly "nipped in the bud" by an extremely cold snap. No other bloom stalks were thrown up though very warm weather followed.

For the February bloom, having decided to put my efforts on the *I. reticulata* and *I. persica*, a search began to secure the *I. reticulata* which had just appeared in commercial iris lists. Even so, it was difficult to obtain. However, persistence will have its reward, so for two successive seasons, in late February and early March, there were a few blooms of those fascinating little irises which Mrs. McKinney in her delightful book "Iris In The Little Garden" likens to "blue-black butterflies."

The other bulbous iris, *I. persica*, I finally secured from Tennessee. These bulbs were planted during the fall of 1928. It is said that both the *I. reticulata* and *I. persica* bloomed the spring of 1929 while I was away from town. This year (1930) on February the 22d *I. persica* appeared like a veritable flock of whitish hovering butterflies with dark spots on the wings and made a most pleasing sight. *I. reticulata* has not bloomed, but one may always hope for better seasons, which is one of the real joys of gardening. These little bulbous irises were planted three inches deep with sand and compost incorporated in the soil, later given a light covering of rotted manure with a second application after freezing weather and pine boughs added.

It is not my intention to claim any great success from my efforts at this time, though the scattered blooms reared in February and March have

encouraged me to feel that it is possible with proper care to have irises blooming continuously for ten months in the gardens in Central Virginia.

JOSEPHINE P. KINNIER.

Lynchburg, Va.

Viburnum fragrans (See page 85.)

During the last years we have heard more and more of *Viburnum carlesii* with its difficulties of propagation and cultivation both for nurserymen and gardeners until now it is fairly common in lists and more common in gardens, rewarding the owner each spring with delightfully scented heads of pink and white flowers.

It is a species with several relatives, more or less like it but varying in charm and value. Among these is the subject of this note, that differs enough so that even the small garden might have both species without overplanting. To the casual eye they might be compared as identical, except for the fact that this species is a little more hardy and more vigorous and produces its flowers before the leaves rather than with them. To be sure, the leaves are often well developed before the flowers fall, as can be seen in the picture, but more often they come and go before the leaves are fully seen. The plant is perfectly hardy in Detroit where it ripens its shoots well and forms its flower buds late in summer, sending them through the winter in safety.

In all probability it is a shrub that will do best in either a severe or a mild climate, and not one such as we have here, where many things are tempted into premature growth only to be frozen as the buds are breaking. Such is sometimes the fate of this viburnum in the shrub garden here, with the result that the flower clusters are very imperfectly developed. For such intermediate places as this, doubtless, a somewhat shaded location that would retard spring growth would be the best site for the plant.

Washington D. C.



Edgar T. Wherry

Shortia galacifolia

[See page 88]

NEGLECTED NATIVES: 4. OCONEE-BELLS.

Shortia galacifolia Torr. & Gray. (See page 87.)

This little plant was first collected by Michaux in the Carolina mountains in 1788, and lay unnamed in his herbarium for many years, until brought to light by Asa Gray. Although only a few leaves and a single seed-pod were preserved, Gray recognized its relationships, and predicted what its flowers would be like. In 1877 it was accidentally rediscovered, along the Catawba River, by a school-teacher who brought it to the attention of scientists. As a result, before the end of his life Gray had the satisfaction of seeing it in its native haunts and of finding that his predictions as to its features were quite correct. Nearly a century after Michaux's first find, the original colony, at the head of the Keowee River, was located by the late Professor C. S. Sargent. Subsequent exploration has disclosed its presence in several other gorges of the Blue Ridge in North and South Carolina, but it remains one of the rarest and most localized of our native plants.

The standard name assigned refers to the bell-shaped flowers and to the abundance of the plant along the Oconee River. The mountaineers who dig it to supply the horticultural trade know it as One-flowered Coltsfoot, or Bearsfoot, or often simply as "Shorty," a corruption of its genus name. The technical nomenclature is clouded by the fact that the name *Shortia*, in honor of Dr. C. W. Short, an eminent botanist of the early 1800's, had been used by Rafinesque for a Cress five years before Torrey and Gray applied it to the present plant. Dr. H. D. House has accordingly proposed to rename the latter *Sherwoodia*, an unfortunate choice in that the amateur botanist to whom the name refers has never made any notable contributions to science, and the association with this

plant attributed to him appears to have been without foundation.

Whatever name may ultimately be selected for this plant by nomenclatorial specialists, its horticultural value is well established. It will not thrive in the ordinary garden border, requiring an acid, humus-rich soil and shade, but it forms a splendid ground cover under Rhododendrons, Kalmias, and coniferous trees, which yield a welcome protecting litter. The glossy evergreen leaves become delicately bronzed by winter's cold, setting off the lovely white or pinkish bell-shaped flowers, which appear in earliest spring—the first of April around Washington, D. C.

Several dealers in native plants list *Shortia*, although unfortunately they do not propagate it to any extent, but obtain their material from the wild. The continual digging for this purpose, together with the devastating fires repeatedly set in the woods because of a mistaken notion that they are beneficial, are rapidly destroying its native colonies. If, however, its soil preferences are taken into account, it can be readily increased by root divisions, cuttings, or seeds. Every one who has a shady wild garden where the soil is acid and the litter is allowed to accumulate should introduce and encourage this plant, and so aid in its preservation. Its beauty will repay whatever has to be done to make it feel at home.

Berberis wilsonae Hemsl. (See page 89.)

Mrs. Wilson's barberry is probably a shrub for the less rigorous parts of our country. It is often slow to become established, but when once decided upon growing, gradually forms a wide mounded mass four feet high and six or more feet in spread with the most dense mass of over-arching stems and tangled twigs and branches that can be imagined. As the twigs are lined with slender but sharp three-parted spines, it is a formidable mass.



Lilian A. Guernsey

Berberis wilsonae
F. P. I. 25569

[See page 88]

The small and narrow gray-green leaves are more or less persistent here, assuming a red to bronze coloring in the fall of the year, especially on the side of the shrub toward the sun, overshadowing the beauty of the translucent berries. In some seasons these are even more abundantly produced than is shown on the branch illustrated, loading down the slender twigs. The berries are first green, then clear amber colors, finally flushed with rose and red. As the skin is thin and the berry filled with sap, the fruits are easily spoiled by heavy freezing and do not last the winter. The flowers that appear in midsummer are not conspicuous.

The plant comes easily from seed, from cuttings of half-ripe wood in late summer and from hardwood cuttings in the winter.

Because of its distinctive growth it is more useful in the mixed shrubbery border or in groups than when used as a hedge. In pruning care must be taken to remove whole shoots at their base rather than to cut them midway as this encourages ugly branching. Very little pruning is required except for the occasional removal of old shoots that are weakened by new growth overtopping them.

Narcissus, Cingalee. (See page 91.)

Rock garden enthusiasts have long known *Narcissus triandrus* and its several forms and have cherished its somewhat transient beauty, growing new supplies from seed as needed. Hybridists have used the species as pollen parent to father various races of more vigorous plants that keep in part, at least, some of the grace of the parent.

The present sort is not new but is not as well known in this country as it should be for it is fairly permanent, producing annually its lemon-yellow trumpets of characteristic grace. As one can see from its portrait, it does not have the tiny fairy grace of its parent nor its small stature, but even

so, it is not too robust to be included in the rock garden of size if some late-blooming plant can be found to hide its ripening foliage.

Washington, D. C.

Cotoneaster foveolata Rehd. and Wils.
(See page 92.)

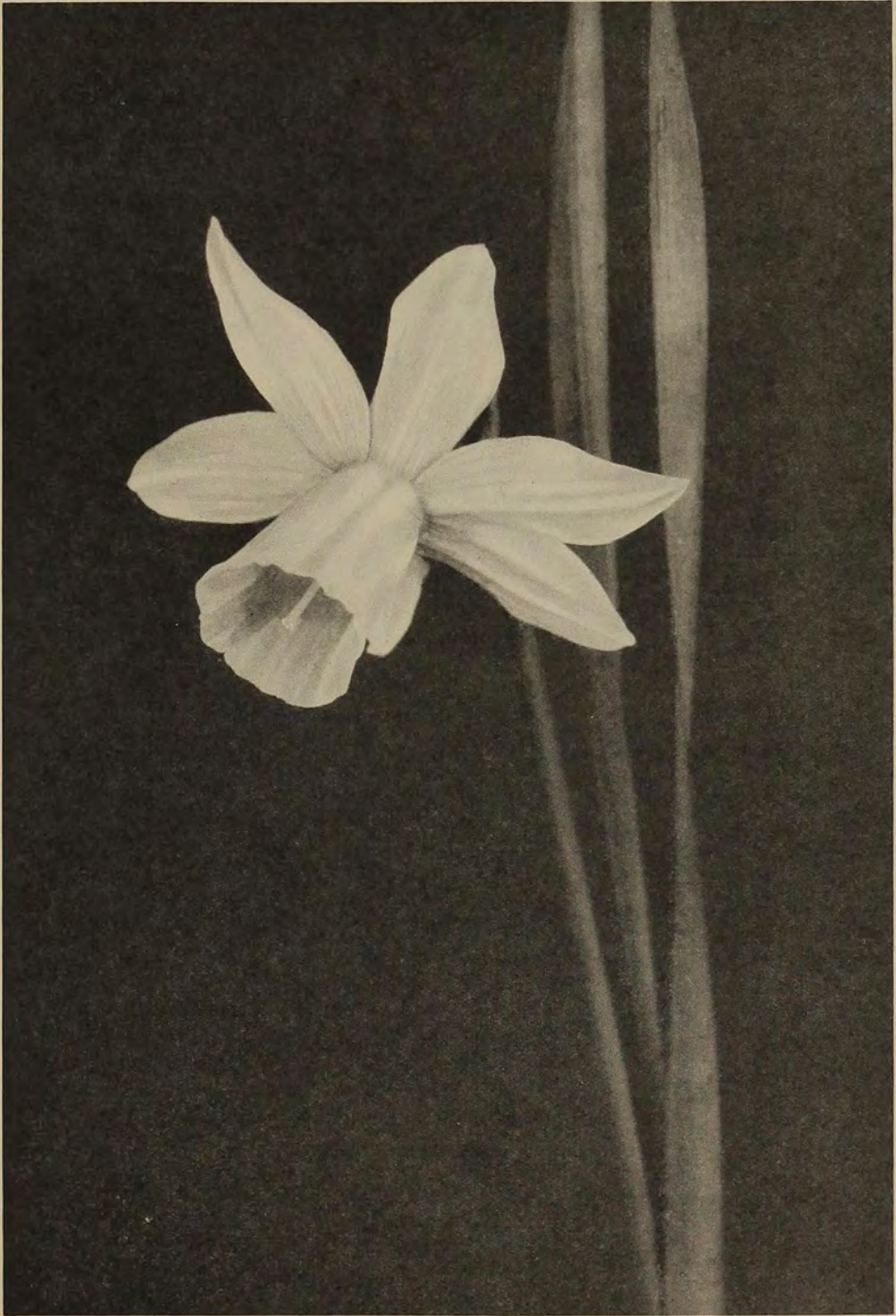
In the latitude of Washington, D. C., this plant is one of the distinctly deciduous cotoneasters, and as compared with the red-fruited species, one of the less interesting sorts. It forms a strong, widely branched, but not very compact shrub up to ten feet in height and almost as much in breadth. The leaves, that are about one and one-half to two inches long, show clearly in the illustration, as do also the purplish black fruits borne of short-fruited lateral branches along the main stems. The flowers that are abundantly produced in the spring are the typical dull white of so many other species. The special beauty of the shrub comes in the brilliant autumn coloring of the leaves before they fall and the turning of the berries that pass through various shades of dull red and purple before they ripen.

Like all the cotoneasters, it is easily, if slowly, raised from seed sown in the fall and left to winter out-of-doors before they are brought into the frame or greenhouse for germination.

Washington, D. C.

Lonicera maackii Maxim. (See page 93.)

This splendid bush honeysuckle from the Orient has been too often mentioned in this magazine to require much further description but is included again to emphasize its merits. It should be given ample room to develop its strong canes and widely spreading branches. Care should be taken also in pruning to study its natural habit of growth and so preserve the characteristic habit.



Lilian A. Guernsey

Narcissus, Cingalee

[See page 90]



Lilian A. Guernsey

Cotoneaster foveolata
F. P. I. 40165

[See page 90]



Lilian A. Guernsey

Lonicera maackii
F. P. I. 57300

[See page 90]

The flowers are abundantly produced, white in color, fading to dull yellow, with little if any scent, and are followed in midsummer by the red-berries that last well into the winter, especially in the variety *podocarpa*, unless carried off by the birds.

Like other honeysuckles, it is easily increased by seed or cuttings.

Washington, D. C.

Lilium tigrinum Ker-Gawl. (See page 95.)

The most ardent devotees of lilies are somewhat unmoved by the charms of the old and too easily managed tiger lily. Possibly its very permanence is its chief fault in their sight, but for the gardener who still keeps a lowly passion for vigorous plants that yield annually a great mass of bold and glowing flowers it makes a real feature in the midsummer border where its brilliant apricot to red orange flowers produce stunning contrasts with the whites of phlox and the blue purples of buddleia and platycodon.

In the spring its strong leafy shoots push up with amazing effect and give a brave display of their own.

It varies somewhat in hue and in size of flowers and there are also variations in time of flowering and in number of petals, ending even in a rather abortive double.

Every one knows its habit of producing small black bulbils in the axils of its leaves from which one can soon produce a stock as large as he wants. The bulbils should be gathered as soon as they can be loosened from the stalk, planted out-of-doors in a sharply drained loam, where they can be protected from heaving in winter with a little litter. They produce roots immediately they are planted, but rarely leaves until the following spring. The second season there is usually a short stalk, rarely a flower or two, and each year thereafter more and more flowers. The stalk illustrated was taken from a plant three years old

from the bulbil, grown under most ordinary garden conditions.

Washington, D. C.

Rosa ferox Bieb. (See page 96.)

This is no plant for the lover of hybrid teas, for it forms a stiff compact bush with many twigs all armed with the vicious spines and prickles as the illustration shows. The flowers are smallish and white, making no great display as they sit upon the short stalks surrounded by their leathery green leaves. In autumn, however, a very fair show is made by the dull scarlet hips that hang on long after the leaves have fallen and give a touch of color to the winter shrub border.

The plant makes no special demands in cultivation but should not be considered seriously except by the gardener who is interested in the strange forms that occur in garden plants, the person who has a feeling for the outlying species that are forgotten many times when garden races have become as numerous and as artificially developed as they have among the roses.

Washington, D. C.

Rhododendron obtusum kaempferi Wils. (See page 97.)

Of all the azaleas from Japan, no other makes so gorgeous a display for northern gardens. Of ample size, vigorous growth and hardness, it may be used well to the north of other forms and each spring will cover its spreading branches with a wealth of salmon pink flowers varying somewhat in size and hue. This is particularly true of plants grown from seed, the seedlings often varying from almost clear pink to almost orange red. Like all its kin, it requires an acid soil reaction but is less impatient than some other species of a low acidity.

In later years it has been combined with various related forms, producing races of plants with even larger flowers and somewhat wider color ranges, among these conspicuously the Koster-race of hybrids with *malvatica*, giving



Lilian A. Guernsey

Lilium tigrinum

[See page 94]



Lilian A. Guernsey

Rosa ferox
F. P. I. 43714

[See page 94]



Lilian A. Guernsey

Rhododendron obtusum kaempferi

[See page 94]

many named forms closely resembling one another but with large flowers of beautiful clear color. Whether or not in time there will be examples of this general type in which the yellow quality of the reds has been diminished so that clearer pinks and violets may be had, remains to be seen.

The type plant is slower than most species to root from cuttings, and these once rooted make less top growth until the following spring than is the case with most others, especially the nearly related Kurumes. It comes easily from seed, however, and gives flowering plants in four years under ordinary conditions.

Washington, D. C.

Iris tripetala Walter. (See page 99.)

This curious species from our Southern States is perhaps not a garden iris in the general sense of the word. Possibly in the South, where it is found, it might be useful in wild garden effects where it could spread about and form wide stretches of thin grass-like foliage from which in May rise the slender flowers of a familiar iris lavender hue. It is interesting to gardeners who like to have a bowing acquaintance with many species for the curious growth of the new shoots as they push away from the old crown, and curious as well in that like its northern cousin *Iris setosa*, its standards are so small that they are scarcely visible between the style branches.

It proved entirely hardy here, but was lost after some years from an over-zealous cleaning and cultivation of the bed, that disturbed the new growth, a fate that sometimes overtakes other iris with slender rhizomes near the surface of the earth.

Washington, D. C.

Prunus subhirtella Miquel. Higan Cherry. (See page 56.)

The ever-popular Yoshino cherry which borders the Tidal Basin in

Washington, and whose blooming is one of the chief delights of the Capital's throngs of spring visitors, has a real competitor. This is the Higan or "equinox cherry," so-called because it blooms about the time of the vernal equinox. The Higan cherry (pronounced he-gahn), with its several varieties, has the distinction among the Japanese flowering cherries of being the earliest to bloom, and that characteristic in itself has a tremendous appeal to flower lovers. But aside from the time of flowering, the cherries of this group need make no apology for their worth as ornamentals. In fact, they have a simple beauty which is attractive in its way as that of the double-flowering forms, now the more popular perhaps because of their being better known.

In general, the Higan cherries have small, usually single flowers varying in color from decided pink to nearly white, with a reddish calyx. Under favorable conditions of weather and insect activity, small, subglobular black, but not delicious, fruits are produced, at times in great abundance.

Like most of the other flowering cherries, this species exhibits a strong tendency toward variation, and because of the large numbers of intermediate forms which from time to time have appeared between the different types, much confusion has resulted among horticulturists and botanists. Many varieties, based on relatively unimportant characters, have been described. It is the opinion of Mr. E. H. Wilson, Keeper of the Arnold Arboretum, that the Benihigan (*Prunus subhirtella ascendens* Wilson) is the prototype or original wild form of the species. The Benihigan (pronounced bay-knee-he-gahn) grows spontaneously in parts of Japan; Quelpart Island, Chosen, and also in the province of Hupeh, Western China. Probably the least attractive of the entire group, it becomes eventually a large tree sixty feet or more high, with thick branches which spread horizontally to form a wide flattened head.



A. L. Rouark

Iris tripetala

[See page 98]

Except for its habit, it does not appear to differ botanically from the other single-flowered Higan cherries. Owing to its rather mediocre ornamental value but vigorous habit of growth, its chief horticultural merit would seem to be as a producer of seeds for stocks on which to work the more desirable varieties. The Japanese, however, have planted this variety, along with the other Higan cherries, in temple grounds and parks in many parts of their country.

The Higanzakura (*P. subhirtella*) is a variety not known in the wild state. It is cultivated widely in western Japan from the extreme north of Honshu to south of Nakasaki in Kyushu, and to a much less extent in eastern Japan. It is a low, bushy, gray-barked tree, probably never exceeding 25 feet in height and usually less. Its wide-spreading branches and short thick trunk result in a broadly rounded crown, resembling in general appearance that of the Japanese plum. The young shoots are gray, but change to brownish purple the second or third years. The Higanzakura (pronounced he-gahn-zock-ur-a) is probably the most floriferous of all the Japanese cherries. In fact, the two trees of this variety which I saw in full bloom at the Arnold Arboretum in April, 1928, were so completely covered with their light-pink flowers that from certain positions one could not see either branches or trunks. About an inch and a half across, the flowers are the largest in the group. For mass effects, it is entirely possible that the Higanzakura may excel even the famous Yoshino, and its behavior at the Arnold Arboretum indicates furthermore that it is hardier.

The most extensively grown and the most popular of all the Higan cherries, in this country at least, is the weeping or pendulous form, the Shidarehigan (*P. subhirtella pendula* Tanaka) (pronounced she-dah-re-he-gahn). In Japan, also, where this is a great favorite, it is to be found everywhere except in the more

northern districts, being planted in temple grounds, cemeteries, and parks. A number of famous individual trees are known in that country, one of which, in Kyoto, facing Maruyama Park, is reported to be about 300 years old. It is about 50 feet high, with a trunk three feet in diameter, and covers the entire square. Another tree near the town of Hachioji, in the grounds of the Kogetsu Temple, is about 70 feet tall, with a trunk 10 feet in girth. As may be inferred from these records, the Shidarehigan is long-lived and becomes eventually a large sized tree. The degree of pendulousness varies greatly, and all gradations may occur from the weeping-willow type to the upright habit of Benhigan. The flowers also vary somewhat in size and color, as is the case with the entire group, and numerous subvarieties have been described on the strength of these variations. The only double-flowering variety among the Higan cherries is the Jugatsuzakura (pronounced jew-got-zu-zak-u-ra), or "October-flowering cherry" (*Prunus subhirtella autumnalis*), a charming little tree, more or less inclined to be bushy in habit, sometimes as much as 20 feet in height, with slender, wide-spreading branches. Usually about three-fourths of an inch across, the light-pink semi-double flowers appear not only in the spring but also in autumn. In the vicinity of Washington the tree is generally well covered with flowers in the spring, while in autumn flowers are few. In Japan it is said sometimes to bear the heavier crop of flowers in the fall. A few flowers are likely to be seen almost any time during the winter if the weather is a bit abnormal. In fact, during last November, as a result of a favorable location and a spell of unusually warm weather, one of the trees of the single-flowered Benhigan also was fairly well covered with flowers at the United States Plant Field Station near Glenn Dale, Md. As a rule, however, the Jugatsuzakura is the only one of the group to bloom more than once a year.

All of the single-flowered Higan cherries are likely to bear a more or less abundant crop of seeds, which ripen in May or June, and the seedlings make excellent stocks on which to work the desired varieties. If seeds are not available, mazzard may be used as a stock, although it has not yet been determined definitely whether the latter will prove quite as satisfactory as *subhirtella* seedlings. With respect to Shidarehigan seedlings, a certain percentage will show the pendulous character in varying degrees, and by careful selection excellent specimen trees may thus be obtained. So far no great success has resulted, in this country at least, in the attempt to propagate the Higan cherries by cuttings. In regard to winter-hardiness, our present but limited experience indicates that these cherries are at least as hardy as the peach and can be grown in the same general areas. Like many other spring-flowering trees, a background of evergreens is almost a necessity for the most effective display of the flowers.

PAUL RUSSELL.

Washington, D. C.

FROM SPAIN

The little I saw of gardens indicated that they were generally utilitarian with flowers used only as hedges. The wall training of fruits (generally apples) in Normandy interested me much. Many of the fronts of the cottages are covered by the pattern of a single tree. As we got south out of the rain and cold, the countryside showed more things to which I am used, and in Spain, which we entered via Barcelona, the villa gardens are using our more common materials which had far more familiarity. There is tremendous employment of box and tiles, which last are often the most prominent features in gardens of Seville and the south. The villas around the cities are mostly awful—worse than the *nouveau riche* do in America—but the homogeneous character of the architecture and the tile

roofs in the little hill towns make even our nice villages seem pretty restless.

We had our first horticultural thrill just out of Cordova on the way to Seville where my wife spotted the first *Iris alata*. After that, on the way to Ronda and between Malaga and Granada, we saw thousands in bloom (mid-January), varying quite a bit in size and shade of lavender or lilac, doing best on gravelly banks by the roadside. A young lad, who saw us picking a few, said there were rarely white ones but we did not see any. We ought to have them in California where they should be happy. From a garden standpoint, partly naturalized, they are far more attractive than *I. stylosa* whose long leaves often hide the flowers. At Gibraltar we saw loads of *I. tingitana* in the markets, brought across the straits from Tangiers, and old *I. kochii* flowering in gardens all through Andalusia. Near Cadiz there were fields of white *Narcissus polyanthus*, a paper-white type, not very effective however. At Ronda the hotel is on a bluff and the English manageress has quite a garden in which she has among other things some little yellow jonquils brought up from the hills, varying quite a bit in size and shape and flowering.

SYDNEY B. MITCHELL.

Avignon, France.

FOR THE EYE

As gardeners continue in their work, changes come inevitably in the way that they feel toward the plants under their care. One of the most interesting developments that can come to the gardener is a new way of seeing things, a new discovery of beauty in the familiar objects under his very eye. A German book, *Art Forms in Nature*, by Karl Blossfelt, is a delightful record of beauty in natural forms as recorded by the camera, often with enlargements. All gardeners should see it.

PLANT WANTS

Any reader is invited to send in a list of his or her wants that can not be found in the catalogs at their command. It will be printed here together with the name and address of the gardener so that other readers may write directly. Mrs. Stout, who inaugurated this column for us, reports that she has already many things from her lists and much pleasure in the exchange of garden letters. Send in your requests, please.

Frank Bailey, Munnysunk Nurseries,
Locust Valley, L. I., N. Y.

Daphne caucasica

Mrs. Charles Stout, Charlecote, Short
Hills, N. J.

Arenaria arctica

Arenaria verna (pink)

Clematis alpina

Crassula simplex

Coreopsis verticillata

Mertensia alpina

Salvia virgata nemorosa

Magnolia macrophylla

The Editor,

Lewisia yosemitense

RANDOM NOTES

Each spring brings particular interest to the gardener who has been housed for months and who impatiently waits for the return of warm weather to get back to his growing plants. Each spring brings as well major and minor tragedies in the border, some of which need passing mention. The winter that is just past has been very kind for the most part to the editor's garden but some things are among the missing that should not have been suspected of tenderness.

Last season with some trepidation small sample lots of bulbs of Pacific Coast species were planted in deep, rather sandy soil on a slope to the south, to see what would be their fate. It is too soon to tell positively the

final results, but already there is good foliage on the plants of *Brodiaea grandiflora*, *Hookera ixiooides* and *Bloomeria aurea* and unless some unhappy chance should bring a real freeze that would destroy the foliage it is unlikely that these will be injured. Nearby the vigorous noses of *Leucocrinum montanum* are pushing up in thick groups that augur well for flowering. The curious leaves of a little delphinium from Idaho are making a brave clump far more suggestive of an anemone than a delphinium. The success of *Sisyrinchium grandiflorum* has been noted elsewhere and is mentioned again at this point in order to call attention once more to this lovely thing that flowered here in early March long before the familiar scillas and chionodoxas had thought of blooming.

Onions of sorts went into the new planting last year with some question in the minds of all as to how they would appear. None have come to flower as yet but their winter behavior is interesting, particularly in the behavior of the leaves. A fine clump of chives new planted in October disappeared with the first frost in a scalded mass of bleached foliage as unlikely in appearance as the foliage of *Geranium lowii* that truly said farewell to this world and garden. Of course this spring the chives are up again as bravely, as pungently as ever. Below them are unfolding the new green leaves of *Allium odorum* and farther along one finds the wiry dark green masses of an onion bought as *Allium aureum*. The tiny plants of the wilding dug up last summer from the stony hills north of Cheyenne are now peering through with the even more delicate *Allium cyaneum* from Europe as their near neighbors. *Allium acuminatum* and *reticulatum* from the West look even happier than *Allium unifolium* from the coast. *Brevistylum*, *recurvatum* and *recurvatum superbum* all found our cold winter to their taste and are coming up with real vigor.

Among these onions it is interesting to note that none have bulbs that

resemble the onion that is eaten and that most of them have scarcely any bulb at all, rather the thickened end of the leaves folded about by several sheathes.

Beside the geranium noted before, the most conspicuous casualties in the border were to be found among the erodiums, all of which perished without a thought except the coarse *manescavi*. This lost most of its huge and more or less decorative rosette but is rapidly making a new one.

Of course major interest centers about the sempervivums in the rock garden. All are robust enough and hardy, even the clump of *tectorum* that was brought back to the East after many years of life in California. All the species purchased in California came through in perfect condition and show no difference in their appearance from those that have always lived in the winter weather in the East.

The most interesting feature noted during the winter was the change of color on the leaves of the several species and forms, changes that have not been noted in any of the popular articles that have come to the writer's attention. It should be remembered that there is often a pattern of dark red or brown stains on the leaves of the *joubarbes* usually occurring as a point or fleck of color on the tip of each leaf. This is usually on the upper surface so that it shows quite clearly when looking down on the rosette. In an unusual number of plants a suffusion of red or bronze color comes on as the weather becomes colder, until often the color on the tips is almost obscured by the color over the entire surface. Again on forms that normally are quite green, a flush of red appears from the core of the plant and flushes up toward the tips of the leaves. Such a color pattern gives a very different effect from the usual one. In a few forms no coloring of any kind shows and the clustered green rosettes of those species make a sharp contrast with the ruddier forms.

As spring comes on another surprise

is in store. Growth commences with the very first warmth that is enough to stir the sap. The leaves that have been curved in to protect the growing point unfold to varying degrees according to the species and the center shows the development of the growing point. This is particularly conspicuous in the plants that belong to the cobweb section, for in them the growing point is entirely hidden by the snowy hairs that reach from tip to tip. Indeed it was with a feeling of some relief that these were seen, for the plants of *arachnoideum* that had been purchased in some quantity in order to get a good colony established had lost almost all of their typical hairs in the first few weeks after their arrival. It became a question as to whether or not the soil might be wrong in its composition, and yet that did not seem likely as the plants themselves were most obviously growing in robust health. With the return of spring the new leaves that are forming are showing as fine a cobweb as one might want, so doubtless the webs were lost only through the unusual growth and the disturbance from shipping.

In addition, many species that were not suspected of hirsute adornments in the fall are showing that they, too, wear tufts and wisps of wool and down. One wonders a bit how long these decorations will continue and how much they may be affected by the weather that the summer may bring forth. In any event, the aspect of the plants that have either cobweb or down are so different that one might suspect different species if he were not familiar with the entire life history.

For the first time this spring the writer has seen the rose-colored form of *Chionodoxa luciliae*. It has rather a better color than some of the so-called pink forms of *Scilla campanulata* or the muscari. No one can claim for it the color of a rose.

Returning to the less happy thought of survival, the winter has taken a severe toll from the somewhat tender *Lonicera nitida* and *pilata*, both of

which are breaking well enough from the bases of the plants. The neighboring bushes of the *Escallonia* figured in the October, 1928, issue of the magazine as "C. F. Ball" has also been cut to the ground so that this hardy sort can now be reported as suffering when the thermometer drops to six below zero. This plant has been determined since as another of the hybrids raised by the late C. F. Ball of the Glasnevin Garden and has been named *Escallonia glasnevinensis* at the suggestion of the director, Mr. Besant.

A rather daring experiment was the purchase of a set of small camellia plants from a California nursery for planting out-of-doors in the garden. They received no other protection than that of a cover of pine boughs to temper the winter sunlight. As might be expected after such a winter, some of the plants are dead, a few are leafless but living and as might not have been expected some of the plants are quite alive and apparently in the best of health. Possibly if a set of varieties, hardy to winter cold and late in flowering can be determined, we shall be able to have camellias much farther north than is now supposed.

For the first time, the foliage of *Berberis sargentiana* has shown signs of winter burning on the younger growths. Possibly this is not unusual as the plants had been moved in midsummer and had been quickened into late growth, although this had apparently been hardened off. *Verruculosa* and *gagnepainii* nearby suffered not at all. *Ligustrum lucidum* came through almost unscathed and the stranvias were beautiful all winter. These last, both the tall growing *dauidiana* and its dwarf variety, *undulata*, should find a place in the evergreen border planned for winter effect. In the type the foliage takes on a fine bronze color and in the variety the color is confined to the under sides of the leaves, making a striking contrast with the green upper surfaces.

Once again, one rejoices at the first

flush of green leaves and clear lemon yellow flowers on *Erythronium grandiflorum robustum*. Each year this is the very first flower sending up its tall, often twin-flowered stalks with flowers far larger than our native Eastern species. Close on its heels comes the lovely *hartwegi*. In this garden, at least, it is longer in bloom than most, with many flowers that straggle along after the first flush of bloom.

Another small bulb that is not often seen here has come again for a second spring even more robustly than the first spring—*Triteilia (Brodiaea) uniflora*. This has flowered in the third week of March and will continue to send up its starry white to lavender flowers for the next three or four weeks. It should be planted in some quantity as then it will form a coarse sod of leaves that lie rather flat on the ground and from which rise the six-inch stems bearing the delicate flowers.

Of course no spring is spring to the editor without narcissus. As we are going to press they have not yet begun their full glory but the hundreds of *Narcissus spurius* are in their full glory and Golden Spur is almost over. The first flowers of the famous King Alfred are crowding up and down their rows and the earliest Leeds and white trumpet varieties are coming rapidly. Mr. Wilson's lovely Nevis seedling is whiter this year than it has ever been and the blooms of the self-yellow incomparabilis, Pilgrimage, are even lovelier than before with a perfection of form and texture that is amazing. After many vicissitudes of transplanting the early Saint Bernard is giving normal flowers, a bit rough in texture but with a glowing orange cup.

White Nile is as early as ever and the superb Naxos is in equal perfection. Goldbeater is rivalling King Alfred in gold and in stem and Florist's Delight will soon be ready for inspection. The ancient Princess Mary is again opening her piquant flowers and Southern Star brings the first touch of real red color to the borders.

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