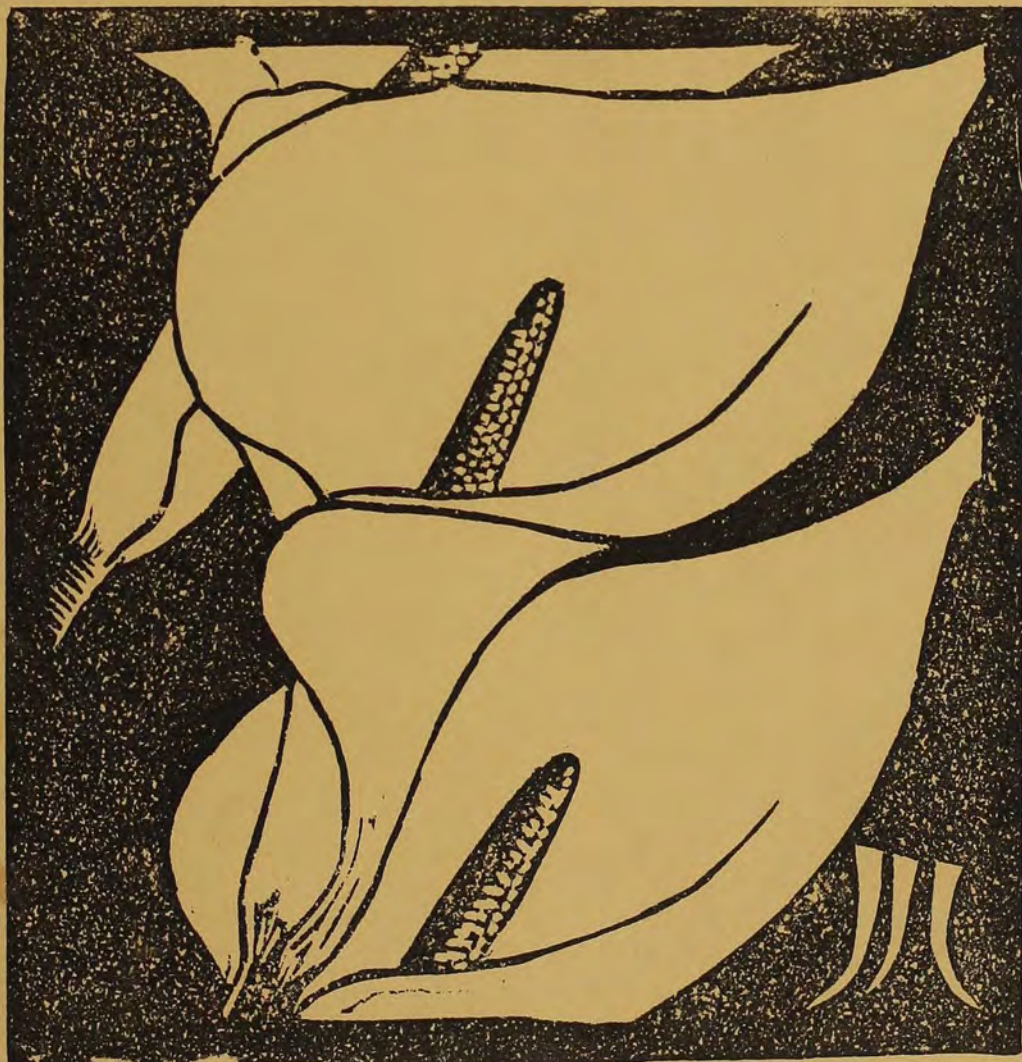


*The* NATIONAL  
HORTICULTURAL  
MAGAZINE



JOURNAL OF THE AMERICAN HORTICULTURAL SOCIETY

OCTOBER, 1935



# The American Horticultural Society

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# October in the Garden

HELEN M. FOX

A PART of our European heritage seems to be an enthusiasm about Spring. Perhaps it is due to the fact that we are brought up on poetry which glorifies the first primrose or violet opening its blossoms while snows of February are melting in the meadows of Auvergne, the fields of Southern Germany or perfuming the cool air of Devonshire and Cornwall. We think, "how charming Spring is, it is veritably the loveliest season of the year." But, where I live and pass my days the facts are quite different. Spring is an exciting time, no doubt, when every tree, shrub and bulb is bursting with unfulfilled promises and there is as yet no sign of the disappointments which invariably come from unsatisfactory fulfillment; but, at least here in New York, it is a cold and rainy time of the year.

Autumn, on the contrary, is a glorious time of warm days shot through with an invigorating chill, and the countryside is ablaze with bold dabs of color painted on with the sure and courageous hand of the most experienced of all artists. It is so gorgeous and so opulent one could not endure it for long, and just as one is about exhausted from too much ecstasy, it all disappears, and the structural lines of the trees and shrubs stand forth bare and stark against the pale blue of the winter sky.

This morning, on the twenty-second of October, I went into the garden. The leaves of the oaks, the last trees to turn, are changing into a golden brown; the maples, ash, birch, and apple trees have already lost some of their leaves, for there have been two "killing frosts."

All the dahlias have blackened stems and have been removed to be prepared for their winter storage; most of the annuals are gone too, but a few have been stimulated by the frost or the short day into a grand last spurt of flowering. These are the California poppies, the lavender alysums, now a deep purple, *Erigeron mucronatus*, calendula, and Chinese forget-me-nots. The annual chrysanthemums keep right on, and, although they are not very handsome, at this time of the year they are welcome. The *Oenothera taraxicifolia* or *acaulis* is sending up its white-turning-to-pink flowers.

The roses are in bloom and the dwarf Polyanthas make vivid beds of color where they are planted. Behind them the species roses are carrying orange or scarlet berries according to their habit. Almost the handsomest berried roses are the natives, and others with good looking berries are *multiflora*, *rubrifolia*, *sericea*, and *xanthocarpa*. The hybrid teas are still in full bloom with healthy vigorous foliage and even a few of the monthly roses have produced unexpected flowers, notably, Frau Karl Druschki, the buds of which are very red at this time of the year. The roses keep on into December and reward a late August feeding at this time of the year.

A few perennials are left here and there—the Chinese delphiniums, heleniums, Michaelmas daisies, tall campanulas, such as *C. bononiensis* and *C. rapunculoides*, and there are rosy tufts on some of the phloxes, while the buddleias still have a few sprays of lavender flowers, as have



the hairbells, violas and fragrant *Viola odorata*. The myrtle has a few blue flowers peeping out between its own shiny green leaves and the scattered gold of the fallen maple leaves. A few perennials are at the very apex of their bloom right now, such as the Aconites, *A. wilsoni* and *A. fischeri*, and, as these midnight-blue flowers are right behind clumps of fluttery pink and white blossoms of *Anemone japonica* hybrids, they make a beautiful picture. There is a handsome blue-flowered perennial salvia, the *S. azurea* var. *grandiflora*, far handsomer than *S. farinacea* which is also a late bloomer. They both require staking. The chrysanthemums are of course in their glory, and this year every one was so delighted with the Korean hybrids which unfortunately did not do well with me at all.

In the rock garden where the herbs are grown, the thymes are flowering again, and there are still the dainty misty flowers of the tunicas, and *Alyssum argenteum* is flowering again, as are a few dianthus and some of the catnips and hyssops. *Daphne cneorum* keeps on until December and the grey artemisias, notably Silver King, *abrotanum* and *stellariana* have long branches of silvery grey leaves. The lavender bushes look bushy and grey, and *Satolina chamaecyparissus* is woolly and grey too. The saffron crocus is in flower; its globe-shaped purple blossoms with their three-parted orange and scarlet pistils hanging down between the segments are very odd, and their scent is a pale puritan echo of what it must be like in its native home in Asia Minor. Later *Thymus lanuginosus* will turn quite purple and all of the herbs smell very strongly after the first few frosts.

The peonies are handsome just now with their bronzy-tinted foliage as

are the aquilegias. Over the well head the turquoise berry vine has its clusters of berries tinted violet, dark blue and turquoise. One can smell the scent of the last honeysuckles and the silver lace vine still in flower has a much attenuated blossom and is daintier than earlier in the season.

However, the chief glory of the garden just now does not consist in the few remaining flowers, but in the foliage of the trees and shrubs and in their fruits. This is not an article on fruiting shrubs and trees, for there have been so many, but merely a record of what one gardener saw in her own garden.

On the hawthorn hedge the scarlet fruits are conspicuous; further along the native American hawthorn, *Crataegus crus-galli*, is all of a garnet red—both its leaves and its berries,—and almost the same color as the leaves of the dogwood, *Cornus florida*, which is beside it. The flowering crabs are in full fruit, from red to orange, according to their nature, and the cotoneasters have long graceful sprays of either red or black berries. Conspicuous amidst all this color are the viburnums, *V. opulus*, a brilliant scarlet as to leaves, and with clusters of pendant translucent cranberry-like fruits. The mountain ash has orange berries and scarlet leaves, and the barberries are particularly handsome with their shiny leaves overcast with bronziness or scarlet and their colored berries. *Hydrangea quercifolia* has large soft oak-shaped leaves, now a bronzy shade, and another native shrub, *Itea virginica*, has turned to orange and bronze in color. White berries are here, too, on *Symphoricarpos albus*, *Cornus stolonifera*, and *C. stolonifera flaviramea*, the yellow twigged dogwood.

There is a long walk bordered with



weeping cut-leaved birches which today have pale gold leaves, and under these are planted azaleas, the leaves of which now shade from green through scarlet and bright red to deep maroon. Andromedas turn bronzy, but the laurels and rhododendrons stay green, and these, with the yews, cedars, pines, hemlocks and spruces now give a sober note to the whole scheme; later they will seem far brighter and almost of an emerald green against the December brown of the lawn and the orange of the meadow grasses. The most vividly colored of all shrubs are the high bush blueberries, now a flaming fire red, and *Euonymus alatus*, truly a "burning bush." It is red with a magenta tinge over it and a light quality of color as if painted on thinly, and amongst these vivid leaves come the orange berries.

Behind and above all these low

plantings are the golden brown oaks, the blue bronze of the ash leaves after first being pale golden, some golden maples and the scarlet swamp maples. One maple is still quite green except that the tips of each leaf are yellow and red.

Over all this color, and binding it together harmonizing it into a whole, is a blue haze, and off in the distance the shadows on the hills are so blue they are almost violet.

Golden October days seem to one person at least, the most gorgeous time in the garden. But, after all, it is a matter of taste, or perhaps of temperament, and something one would not care to dispute about, especially in describing a peaceful walk through the garden, now very still except for the rustling of the leaves underfoot, the cheery chirping of the Phoebe birds, and off in the distance, the squawk of a crow.



*Silene Ingrami*

## West American Silenes

CARL PURDY

THE genus *Silene* is a large one, found both in Europe, in Asia and in North America.

There are a number of very good garden plants outside of the Pacific Slope, some of which I do not know but a few of which I can recommend. There is *S. Schafta* which while rather a dull rose in color, fully atones for any defects by flowering in the fall and being a very excellent rock plant when few rock plants are at their best. Most hardy and thrifty too.

Then there is *S. maritima* which makes a flat cushion of a pleasing light bluish green and has many white flowers. Its cushion is always fine either winter or summer

and its flowers are not bad. It too, fills a distinctive place in the rock garden and it makes a fine drape over a wall.

The finest silene east of the Rockies is the Fire Pink, *S. virginica* which is a very pretty low growing plant whose flowers are crimson or scarlet and showy. It is one to two feet high and also an excellent rock plant. Whether *S. Wherryi* is a form of this or a species I do not know but it is a fine thing much to be desired and not too often to be possessed. *Silene pennsylvanica* is another very excellent Eastern species.

It is along the Pacific Slope that the genus is best represented and here there are eighteen species. Of



fourteen of these one can say, "pretty," "interesting," "neat," and be within bounds but really none of these fourteen are of much garden value. That leaves us four, but that four are among the very finest of plants.

Before going into their descriptions I must give some general information bearing on them and many other silenes.

They are oftener found in a quite pervious, well-drained and deep soil and the roots have peculiarities. The main root is a perpendicular rather fleshy tap root, three-sixteenths of an inch thick in fair flowering plants although as much as three-fourths inch thick in heavy old ones and it goes down from a foot to as much as three feet with many feeding roots at the base. It is a little hard to credit the depth to which these tap roots can reach but I have noted them in slides in road banks as much as five feet in length.

From the top of this tap root which is usually an inch to four inches below the surface, spread from a few to many slender tendril-like branches laterally through the soil, each of these terminated in a white bud from which the season's growth and bloom will come.

Often these spread as much as two feet and one would be almost sure that there was a colony when in reality all can be traced back to one center.

Quite apparently it would be impossible to lift or to plant the full length of one of these tap roots and the practise is to cut them off about six inches long. This cut soon heals and many fibrous roots are formed to make a plant that may be more readily transplanted and in its permanent new home will gradually reach great depths.

From this description it is plain to see that the top of the tap root from which radiate the tiny tendrils of growth must be set at least an inch below the surface of the soil. My practise is to set the top of the tap root from an inch to two inches deep according to the size of the plant, spreading the tendrils laterally and upward so that the tips of the tendrils are just under the surface. I believe that all failures with these Western silenes may be attributed to the fact that they have been planted too shallow.

Our Western silenes, and it is true of many of our Western perennials, ripen after the end of flowering period and lie dormant until rain comes. If they are moved in late winter or spring after the growth starts they are apt to sulk but the dormant roots grow quickly and finely.

I dig the ripe roots and store them in pits in slightly moist soil and these stored roots handle very much like bulbs until late spring, but must be kept moist at all times.

*Silene laciniata* of Southern California makes a compact erect plant from two to five feet in height. The flowers are of fine form, beautifully lacinated in petal and a brilliant scarlet. It is similar to but not as good as *californica* which has equally showy flowers and is much more compact.

*S. californica* is found from the northern border of California down two-thirds of the length of the state, both in the Coast range and the Sierra Nevada. It is always a plant of open woods and of loose deep soils. Often one finds it in ledges of broken rocks. This species will respond to a little moisture and remain green throughout the summer often flowering a number of times, and is a particularly brilliant plant in its late spring bloom.



The underground stems spread quite widely with many flowering stems which may either be in a small compact clump when in an exposed situation or with stems over a foot high and widely spreading in shade or in rocks. Its fine scarlet flowers are most showy and perhaps the showiest woodland flower in California. A splendid and showy plant and very drouth resistant once it is well established.

*S. Hookeri*. I do not think that any one who sees *S. Hookeri* in a fine specimen will refuse to place it with the first few desirable rock plants. The underground stems travel far before coming through the soil and the stem above ground is only two inches high with from one to several flowers but there are many such stems appearing over a circle of from eight inches to as much as two feet across. The exquisite flowers are one and a half to two inches across, of a delicate soft pink with a contrasting white halo at center and the petals deeply and finely lacinated.

*Silene Ingrami* in Southern Oregon has only been known a very few years but has won commendation wherever seen.

Its general habit is that of *S. Hookeri* but the stems are taller, about four inches, the petals less cut and the color is a uniform deep pink. In its way is as lovely as *S. Hookeri*.

Either of these silenes should have an open pocket in the rock garden where the roots may reach deeply. As mentioned before the top of tap root should be set half an inch to two inches below the surface according to the size of root and the tendrils spread laterally and upward so that the tips are just covered. As they ripen up after flowering the pocket should be well marked to prevent injury during the dormant period.

*S. californica* or *S. laciniata* may also be planted in rock banks wherever there is a good pervious underlying soil into which the roots can grow.







*Begonia Rex* and related species  
After Curtis Botanical Magazine

## Begonia Breeding—The Rex Mixture

ALFRED D. ROBINSON

It has been suggested that I write an article on Begonia breeding, and with the suggestion was submitted one on iris that was considered a model. The iris expert claimed to be inspired while lying in bed early in the morning listening to the birds singing for their breakfast, and so right at the beginning I have to digress, as I sleep in the morning till I am literally turned out, but I do lie awake in the night when my coffee has been too strong or too plentiful and then I am apt to fancy myself a plant breeding wizard who can make Begonias bloom like orchids, smell like carnations and climb fences ahead of a pumpkin

vine; Alas! This wizard has lost his magic when daylight doth appear.

Honesty compels me to decline any claim to science in my plant experiments. I am fairly familiar with Mendel's manoeuvres with peas, and most of the other theories with diagrams, including those of the combs of chickens, and later have been hopelessly confused by learned dissertations about Genes and Cosmogones, but though I love to hear them propounded they have not touched what, to me, is the main problem, and that is—Why, when I cross pollinate, there should be only one of several hundred resulting seeds in a pod affected



by the cross. From this confession it must be plain that there will be no regular formula for breeding Begonias; only some information about what has been done along that line and a few suggestions as to what might be attempted.

Because the Begonia family is so large and so various, including members from creepers to trees, with leaves as small as sections of maiden-hair fern to others two feet in diameter with blooms to match, it would seem advisable to confine this discussion to one family, and I have chosen the *Rex*, mainly because there are now more people in this country interested in it, and the raising of it from seed with the object of securing new varieties, than in all the rest combined.

For fifty years I had supposed that the Rex Begonias had one progenitor, the so-called "*Rex*," which in my boyhood had tens of thousands of facsimiles in cloth and papier mache gathering dust and spiderwebs in store windows and later sharing with other discards the high shelves in the back; but an introduction to *Curtis' Botanical Magazine* uncovered the six species here illustrated by leaf drawings and did much to explain the different types in leaves. There are varieties now in cultivation closely resembling all of them, and the crosses herein afterwards discussed throw light on other differences.

It might be noticed that all six of these Rexes are native to the same part of the world, the middle regions between the Bay of Bengal and the Himalayas, and that this is a land of rainfall almost incredible in volume to the North American mind—four hundred inches a year, forty inches in twenty-four hours or four times the average yearly precipitation in the

land of my dwelling, Point Loma, California. And then I am asked if a little water on the leaves of the Rexes is harmful.

The success of experiments made in the past in mating different families of the Begonias are encouraging to future operators, in fact the same experiments might be well worth repeating.

Always in our American culture we have had a Begonia called the Silver leaf and also *Argentea erecta* but recently it has been identified as Abel Carriere, the products of a cross made in France between Rex and the tuberous *Begonia Evansiana* or *Discolor* (illustrated), also native to Asia. *Evansiana* was the male parent. The illustration gives a good idea of Abel Carriere. Others of this breeding still to be found are, Ed. Pynaert and Edward B. Kennedy. Another cross was made between Rex and *Diadema*, a native of Borneo, which the illustration shows to be a straggling stemmed species very unlike a Rex. From this cross came some of the best things in this section. *Le-soudsii* (illustrated), and definitely Rex, is perhaps the most vigorous of any and produces very wonderful specimen plants, moreover it can be expected to do its part in any breeding experiment, ripening pollen and maturing seed better than any straight Rex. Other well known ones from this cross that retained the branching habit of *Diadema* are Adrien Schmidt (illustrated) and probably the beautiful, but temperamental, Bertha McGregor. A variety now called George Schmitt is very similar to one of this family known as Clementina, though my memory of Clementina is that she showed more leg than George does.

A recent very successful cross has been made by Roy Berry of Torrance-





*Begonia Evansiana*



*Begonia, Abel Carriere*

*Rex* × *Exansiana*





*Begonia Lesoudsii*  
*Rex* × *Diadema*

California, between *Rex* and *Dregei*, which on the face of it would seem an impossible mating. *Dregei* (illustrated) is a semi-tuberous from South Africa, a very bushy small leaved cheerful plant, chiefly remarkable for its share in the production of the so called winter bloomers, *Lorraine*, *Cincinnati*, *Melior*, etc., the other parent being *Socotrana* from the island of Socotra in the Red Sea, an unbelievable location for a *Begonia*, with its very torrid climate.

The Berry hybrids produce many small leaves with the *Rex* patterns and though too new to have had the only real test, time, are very promising (see illustration).

The fact that the *Rex* crossed with *Dregei* suggests that a possible mating might be made with *Rex* and *Sutherlandi*, another semi-tuberous

from South Africa with an orange bloom, and of course there are the others in this class, *Richardsoni* with very lacy fernlike foliage, *Weltsoniesis* both pink and white and *McBethii*—here is a field full of good prospects.

There is a notation in a magazine of fifty years ago of a cross made between the *Rex* and the tuberous. That was at a time when the tuberous was far from the astonishing development of the present day, but what has been done can be done, and the possibilities are absolutely glittering.

I have a hunch that an alliance between *Rex* and *Scharffiana* might produce something interesting. *Scharffiana* should give height and the ability to hold the foliage throughout the year, and the *Rex* might give the variety in the leaves.





*Berry Hybrid Begonias*

*Dregei* × *Rex*

This *Scharffiana* used to be one of the prime favorites for wall pockets, but a continuous propagation by cuttings under the artificial conditions of the heated greenhouse sapped its constitution till it existed only as an uninteresting invalid. One of these excited the pity of Mr. David Fairchild when he visited my lathhouse and he remarked "Robinson, you must raise these Begonias from seed, it is the only way to restore their vigor." Shortly after this visit I started to resuscitate *Scharffiana*. Repeated failure to mature seed from the use of its own pollen led me to use pollen from an allied variety, *Viaude*, and twelve seedlings resulted, one of extraordinary vigor, and from this a new strain originated, that is proving one of the hardiest of all the begonia family, and we can quite dispense with the cultural note, "This Begonia requires warmth and care to succeed well."

The Begonia has long been a favorite subject for plant breeding experiments. Its blooms being either male or female removes the necessity for the delicate operation of emasculation; the difference between the blooms is easily discernible in the illustration of *Evansiana*. Further, natural pollenization is inconsiderable except in a few of the subfamilies such as the small bedding type and the tuberous, and that, together with the absence of honey in the bloom as an attraction to insects, puts the muslin or paper bag protector in the discard. The female flower with its conspicuous three-winged seedpod is so markedly different to the male that the merest tyro can distinguish them even without inspecting stamens and stigma, and that's a big help if one has not studied botany. And again we can dispense with the forceps and shears and camels' hair brush for the male flower when plucked is perfect-





*Begonia, Adrien Schmitt*

*Rex × Diadema*



ly formed to contact the female. A light touch of the finger nail to the male flower will show when the pollen is ripe.

The one difficulty in pollinating the Rex Begonia is its indifference to ripening its pollen. Nothing I have tried will insure this ripening, but the condition has been helped by exposure to direct sunlight, even to the extent of marring the beauty of the plant. Rexes make blooms quite freely especially in the late summer but without help in pollenization ripen very little seed; even when the seedpod hangs on till dry, and very few do, they frequently contain nothing but husks; however a microscope will show whether the experiment should be carried further, for good seeds will appear as plump kernels very easily distinguished.

It would be mean to end this without a few directions as to sowing seed and care of seedlings, so here are a few hints prefaced by the serious admonition that water must be soft and soil free from alkali as the Begonia asks for acid conditions. Our government experimenting with Rhododendron seedlings evolved a very simple treatment for hard water that has proved a life saver for many of these acid-loving plants. Here it is—one-half ounce of super-saturated solution of alum to the gallon of water. This chases the salts to the bottom and the top water is soft.

Leaf mold is the best soil for seed. Sift this through a medium fine screen using the coarser part on the bottom of a shallow seed pan, place the fine material on top of this, thoroughly soak with boiling water. When cool, firm and level, spread the seed, mixed with ten times its bulk of fine dry soil, evenly over the surface. Cover the pan with a sheet of glass and

keep in a dry place at a temperature around 65 F. till the seed sprouts when it must be gradually brought to the light, but never full sunlight.

As soon as seedlings have rooted firmly enough not to be disturbed by it, use a fine spray instead of soaking. A spray for applying insecticides is good.

When the leaves have dried after watering, sprinkle a little fine dry soil over surface to cover roots of seedlings.

When large enough to handle, prick out in similar soil and water as before.

When crowded, pot or plant out.

Various instruments are recommended for pricking out; a small finger nail file or a gold nib will answer.

If seed is started early in the year it is helpful to take the chill off water used.

A final warning, a double barreled one. For some reason, unexplained by anything I have read though possibly in the "gene" realm, which I frankly admit is away above my playground, only a few, if any, of the hundreds of begonia seeds in a begonia pod are affected by cross pollenization. It, therefore, seems advisable to raise all that can be grown to a stage when intelligent selection can be made. I have a thousand Rex seedlings from a very few crosses; they are approaching two years old. They vary astoundingly in size and shape of leaf and leaf markings and coloring. Some are barely above the pot, others are a foot high with more than six-inch leaves, and they are changing in themselves and as to one another all the time.

Now for the second barrel. Because "the simpler the form the more vigorous the habit" appears to be natural law, the prizes in plant breeding





*Begonia Dregii*

are apt to be among the weaker seedlings. If you must curtail numbers, throw away those that grow ahead, rather than the trailers.



# Plant Collecting in the Colorado Rockies

KATHLEEN N. MARRIAGE

IT'S mid-May but a dry winter and late rains have delayed our foothill flowers till now and they're all arriving at once. High time we go out to see who's coming. This is a one-day spur-of-the-moment collecting sortie. With callous inconsiderateness I call off some appointments, we line our tin tackle boxes with wet paper, load them into the car (the new Aphid) with Botany books, camera, lunch and what-not and start into our nearby hills, the foothills of Pike's Peak. These grassy hills are sudden, steep and mesa-topped with rough gullies between, telling the story of aridity broken by torrential rains. Along these steep washes and in little gentler depressions where seed could find a stopping place moist enough for its liking are scrubby shrubs, *Rhus trilobata* (Skunkbush), *Cercocarpus parvifolius* (Mountain Mahogany) and *Quercus gambelli* (Scrub Oak) with an occasional stray *Juniper scopularum* (Silver Cedar) and *Pinus ponderosa* (Yellow Pine).

Where grass is sparse are cacti: *Opuntia polycantha* and *O. rhodanthe*, *Echinocereus viridiflora*, *Mamillaria vivipara*, their buds all fattening for bloom. Cacti may request dry feet but they do respond heartily to showers when they're getting ready to bloom. We've just crossed our Rampage Creek when at our feet are whole colonies of *Mertensia lanceolata*, *Allium textile* and *Leucocrinum montanum* (Sandy Lily), the last with clear smooth star-like waxy-white flowers trying to push their heads out between and above their slender, glaucous foliage—all so in contrast to their neighbors of wiry prickles and insidious glochids. This Sand Lily

has been grown successfully in rock gardens at sea level on a diet of gravel and rockchips.

In and near tufts of grass are the delicate soft yellow flowers of *Lithospermum angustifolium*. Dotted here and there are groups of *Pentstemon angustifolius* without regard apparently for any conditions except drainage and then drainage and then more drainage. Here on this hillside of low diet it is perfect—graceful, erect, less than a foot high, the grey blue of its foliage and stem helping to intensify the already dazzling turquoise blue of its flowers. When we give this the run-of-the-garden treatment it grows into a bush plant with two-foot spikes still of good clear blue, excellent for cut flowers but gross compared with the wild thing of characteristic slenderness and dazzling color. Several of these Colorado pentstemons have definite horticultural value if we can only keep them from overeating—"Little food and less drink" may be the prescription.

We're getting higher now—climbing along the north slope where we soon begin to see *Anemone pulsatilla*, first shortstemmed and palefaced in the open—later near shrubs and up on the mesa the flowers are deep lavender to purple, their furry exterior doing its best to make up for the delayed foliage. These seem to be adaptable for they are plentiful on these open dry foothills at 5,000 and 6,000 feet and in moist aspen groves at 9,000 and 10,000 feet elevation. They transplant moderately well and are easily grown from seed.

On the Mesa are many colonies of Sand Lilies, *Echinocereus viridiflorus*, and *Townsendia escapa* (Easter





H. L. Standley

*Opuntia polycantha*



K. N. Marriage

*Echinocereus viridiflorus*



Daisy) a tiny low one with tufts of narrow basal foliage.

We return by way of a deep east-west rocky ravine in which grow woodsia ferns. These and calochortus seem incongruous in our dry hills and it surprises one over again to find them here. This ravine opens into a gentler slope evidently ploughed in an attempt to grow some crop and then abandoned, for it is covered now with the loveliest carpet of *Anogra albicaulis*—a bit blowsy as an individual but making an airy fluttering field of white.

Among pioneer vegetation on these sand and gravel slopes, denuded of grass by eroding agencies (ploughing and overgrazing) there are plants of definite horticultural value. The oenotheras delight in being the first on the ground, pentstemons running a close second. These pentstemons knew their stuff when they selected this background of peachy pink and vivid terra cotta to show off their glorious blues. The finely cut silver foliage of *Artemisia frigida* is the next arrival, perhaps the loveliest of all the Colorado sages, excellent in the garden if given a hair-cut when it attempts to throw bloom stalks, for the flowers are insignificant and stringy looking. On a sunbaked slope of the rock garden this makes a soft all-summer carpet and for a neat shorn border in the little garden it is unbeatable but inclined to sulk when requested to grow in shade.

The stiff scarlet heads of *Castilleja integra* are bobbing up everywhere. These seem to be capable of adapting themselves to a wide variety of soils, conditions and elevations, but try to lasso them and they balk. Seed germinates readily but the seedlings die when transplanted. It has been suggested that they are parasitic. Plants

we have collected with a ball which includes the surrounding conglomeration of vegetation grow and bloom in the garden. If they do sponge they seem indifferent to the nature of the spongee.

Now we have reached the main valley of Rampage Creek. The soil is a heavy clay on gravel subsoil. *Argemone platyceras* (Prickly Poppy) is showing fat gherkin-y buds. The foliage of this is one of the finest of the glaucous greys for the garden, and the large white flowers with their jolly stamens are grand—even if they are only annuals. This is a real addition to the white garden.

*Yucca glauca* is everywhere and already the thick bud spikes are pushing up in preparation for a military display next month of soldierly erectness—and don't the individual flowers suggest the helmet decoration of the British 21st Lancers?

Now we have circled back to the Aphid and a drive of about six or seven miles skirting the foothills brings us to Broadmoor tucked between the secluded country estates that are rich in flowers during May and June. Groves of Scrub Oak meander down into the fields, and everywhere in their shelter are tufts of *Anemone pulsatilla*.

A few years ago one field here caused me to experience the just humility of the upstart, for each day I drove through it till it brought up at the boundary wall of an estate inside which I was supervising the making of a Rock Garden—an ideal site with natural outcrop of rock jutting through a steep scrub-oak bank. I squirmed for the insufferable conceit of the fool that I was, attempting to construct an attractive artificial garden in competition with this natural one—acres dotted all at once with





K. N. Marriage

*Anogra albicaulis*



K. N. Marriage

*Argemone platyceras*





*K. N. Marriage*

*Asclepias pumila*



*K. N. Marriage*

*Astragalus sp.*



*Anemone pulsatilla*, Sand Lilies, bright rosy pink Vetch, *Asclepias pumila*, *Lithospermum angustifolium*, *Mertensia lanceolata*, *Corydalis cheilanthifolia*, *Townsendia escaea*, and the first of the Aragallus, *Tradescantia virginica* (Widow's Tears—dry up quickly). But to get back to our moutons: We make notes on where to collect seed later, marking individual plants that show distinction, and flowering plants of Sand Lily for this has such a long tube that the capsule is below the surface of the ground and we must dig for seeds.

While one does all this another takes pictures, or scorches the grass with sulphurous language at a pentstemon that jitters in the wind. No one with less than Quaker morals and Quaker patience should try to photograph pentstemons with lens or films except of highest speed. They've the most aggravating way of arranging

that the several stems of a plant take turns at quivering and so the plant is never still at one time.

One of the polo fields here is unusually rich in flowers—no, not the dandelion one. All of the native species of aragallus and astragalus have a round-up here and from early May till late June they are in festive togs—pale lavender white and pink and as these go the brightest purple red *Aragallus Lamberti* comes—they may be the magenta scorned of the garden but they make a gorgeous effect in this green field. Lucky they timed their party before polo season! These are all more difficult to grow from collected plants than from seed so we get only a few young plants of each and these with soil on their roots.

Time to go home—but as the snow is melting on Pike's Peak there'll soon be great doings among the al-pines up there.



# Plant Collecting in the Canadian Rockies

ROBERT M. SENIOR

EVERYONE who has visited our National Parks in the Rocky Mountains is aware that each has distinctive scenery, and for that matter, more or less distinctive flora and fauna. Bryce Canyon National Park is noted for its fantastic and multicolored rock formations, Mesa Verde for its remains of the Cliff Dwellings, Yellowstone for its geysers, hot springs, and other weird natural phenomena, Glacier National Park for its rugged, towering mountains. Comparatively few of our tourists have visited the Canadian National Parks, and particularly one of the most glorious in North America—Jasper National Park. Here are to be found high snow clad mountains, huge glaciers, glorious falls, and swift flowing, silt laden rivers.

The little town of Jasper is reached by the Canadian National railway—the most northerly transcontinental line in North America. Here we arrived early in July, intent on spending a month, fishing, and tramping through the mountains. Our headquarters were the well-run, comfortable Jasper Park Lodge—really the only large, commodious hotel in the Park. Located in a large valley, with a lovely lake a stone's throw from our porch, and just beyond, the rushing Athabasca river, with high snow capped mountains for a background, one could sit contentedly for hours, gazing at the magnificent panorama.

But it is not my purpose to discuss the scenery of Jasper, or to tell of the abundance of wildlife, the interesting automobile rides, the endless trails: but rather we shall limit our excursions to a search for the Alpine plants that bedeck the meadows and mountains.

The valley in which Jasper is situated is approximately 3,500 feet above sea level—for example, only about one-half as high as Rocky Mountain National Park in Colorado; but owing to the fact Jasper is so much further north, one will find here many flowers that, further south, grow at much higher altitudes. Possibly it may be of interest to mention some of the plants that are found in both Parks. Here are a few, taken at random: *Anemone globosa*, and *patens*, *Allium cernuum*, *Aster Lindleyanus*, *Castilleja miniata*, *Clematis columbiana*, *Chamaenirium latifolium*, *Dasyphora fruticosa*, *Dryas octopetals*, *Gentiana amarella*, *Gaillardia aristata*, *Galium boreale*, *Lilium montanum*, *Linum Lewisii*, *Sedum stenopetalum*, *Zygadenus elegans*.

For those who have bog gardens, it would be well worth trying some of the flowers growing on the damp turfy ground adjoining the brooks and ponds of this Canadian park. There is a charming primrose (*P. maccalliana*), growing about 4 inches high, that is comparatively unknown to rock gardeners, which is found in great quantities, and somewhat resembles a diminutive *P. farinosa*. Attractive lobelias (*L. kalmii*), and low dodecatheons (*D. pauciflorum*) cover the ground, and side by side grow clumps of *Dryas integrifolia*, which even in seed, with their feathery plumed heads, are a charming sight. Here and there, one comes across Ladies Tresses (*Spiranthes romanoffia*) and several varieties of orchis. In July, the Butterwort is no longer in bloom, but the greasy basal leaves, that threaten to melt in your hand, are still a source of interest.





*Arnica cordifolia*



A few steps beyond these damp-loving plants, on ground that is possibly two or three feet higher, one may encounter a clump of pines (*Pinus contorta*), and beneath their protecting shade, not only the orchis grows, but also the lady's slipper—both the yellow one (*Cypripedium parviflorum*), and the much rarer white one (*C. passerinum*). Some of the plants that we find in our eastern states, such as the bunchberry, the pyrola, the calypso, are also encountered.

On many of the low hills, bordering the forest, in full sunshine, and hugging the rocks, may be found clumps of saxifrage, *S. Lyalli* and *S. austro-montana*. This latter plant is widely dispersed over the Rockies, and with its tiny one-half inch rosettes of narrowly lanceolate leaves, from which emerge short graceful flowering stems, is a sight to delight the eye. This saxifrage is occasionally listed in the catalogues of nurserymen, and if protected with a pane of glass during the winter, should succeed in many of our gardens.

Occasionally on our trips, we would cross a dry stream bed, and here, between endless rocks and boulders, we would view literally thousands of *Dryas Drummondii* waving their plummy seed heads in the breeze. Some of us have raised this lovely plant in our rock gardens, only to have it disappear after a year or two. No doubt we should take a leaf from Nature's book, and try it again on a scree composed mostly of rock and gravel.

Several horseback trails lead to the summits of some of the neighboring mountains. In approximately two to three hours one can reach the timber line, and here again, an entirely different type of plants appears. On these windswept slopes, all the flowers

sit close to the ground, and frequently take on a more brilliant hue than their sisters, in the valley below. Possibly the first to attract the eye is the heavenly blue alpine forget-me-not (*Myosotis alpestris*). Of course the moss campion (*Silene acaulis*) which frequents the mountains tops throughout the Rockies, hugs innumerable rocks and crevices. This plant will frequently survive in a cool spot in our rock gardens, but for me it is a perverse little creature, in that it declines to bloom when in a civilized environment. I have doctored it alternately with stones, sand, loam, and sphagnum, but in every instance it has refused to yield its pink jewels.

On one of these mountains, I encountered a campanula that I have never found elsewhere in the Rockies. The natives call it *C. uniflora*; but with its tiny one-inch, denticulate, acute basal leaves, its purplish-black, white-hairy calyx, and large single light violet flowers, it does not resemble the *C. uniflora* that I have seen elsewhere. Some people think it is *C. lasiocarpa*, which also has one flower to a stem—and indeed it has a leaf somewhat like that plant; but the dark purple calyx, bearing white hairs, marks it as a somewhat different species. The accompanying photograph may enable my readers to identify it for me.

At the very summit of these mountains, not a plant grows over four inches high; in fact snow covers the surface for such a large part of the year that it is surprising any plant whatsoever can exist; therefore it is necessary for the wee plant to bloom and mature its seed within a brief space of time. One may often see an alpine in full bloom today, and come back to the same spot ten days later to find the seed pod fully matured.





Upper left—*Anemone Drummondii*, *A. occidentalis*, *Saxifraga austro-montana*  
 Upper right—*Cypripedium parviflorum*, *C. passerinum* in lower left  
 Lower left—*Chamaenerion latifolium*  
 Lower right—The unknown campanula referred to in this paper



On one of the bleakest mountains, at the very top, I came across large clumps of *Dryas octapetala*. This plant seems to have wonderful powers of adaptation: seeds brought down from immense heights, even as far as the seashore, given proper soil conditions, germinate and thrive in our gardens.

The accompanying photograph may give an idea of some of the plants found within a few hundred yards from the base of the snow-covered Mt. Edith Cavell. Here, growing almost side by side, were the huge, plummy seed heads of the beautiful anemone *occidentalis*, together with a smaller and comparatively rare anemone (*A. Drummondii*). Beside these plants can be seen the several flowering stems of *Saxifraga austro-montana*. Unfortunately my kodak was unable to include the moss champion (*Silene acaulis*), and a relatively tiny arnica growing two or three feet away.

Although I brought back seeds of *Anemone occidentalis*, I almost despair of raising the plant. Because of its charm, I have tried it again and again, but without success. The seeds will germinate, though they are slow in doing so; however, when the hot days of summer approach, the tiny seedlings seem to pine for their cool mountains, and despite all my ministrations, fade before my eyes. I wonder if rock gardeners east of the Mississippi have succeeded in raising the perverse creature?

A few hundred yards from *Anemone occidentalis*—on a steep shale bank, where not a blade of grass grew—I beheld a yard wide clump of *Pentstemon fruticosus* with masses of erect, purplish-pink flowers. How it obtains enough nutriment to survive amid that agglomeration of broken slate, is indeed a mystery.

Another glorious sight—on the hillsides, not far from the glacier—are the mountain heathers—the so-called false white heather (*Phyllodoce glanduliflora*), and the pink one (*Phyllodoce empetriformis*). Associated with them is the white heath (*Cassiope mertensiana*). Sometimes one finds huge drifts of these plants, intermingled in such dense clumps, that no other vegetation is able to compete with them.

Of the shrubs, the one most frequently encountered is the buffalovevery (*Shepherdia canadensis*), a bush about three feet high, with masses of red berries pressing the stems, each berry about the size of our wild cherries; occasionally one finds a plant bearing orange colored fruit. I have never seen this bush under cultivation, but I have brought home a large number of seeds, and have hopes that it may be a distinct acquisition to my collection of low-growing shrubs.

At a somewhat higher altitude, I found two ericaceous shrubs that I had never seen before, *Azaleastrum albiflorum*, called by the natives the white rhododendron, and *Menziesia ferruginea*. Both of these plants are about two to five feet high, and bear whitish flowers, those of the former being approximately an inch broad; the latter has urn-shaped flowers, which though not big, are numerous enough to attract and please the eye.

By the first of September, the riot of color that one finds on alpine meadow and mountainside begins to fade. The little plants have mostly matured their seeds, and are preparing themselves for their long winter sleep. The chill, frosty nights warn us that it is time to take leave of our friends. Reluctantly we depart, treasuring in our minds the memories of a glorious summer outing.



# New Zealand Alpines

C. R. WORTH

THE article on New Zealand flora in THE NATIONAL HORTICULTURAL MAGAZINE for January, 1935, was decidedly pessimistic regarding the possibility of raising New Zealand alpines in this country. A study of the climatic conditions of these islands, as set forth in L. Cockayne's *Vegetation of New Zealand*, impresses one even more with the apparent futility of any attempts at cultivation in the East even without the complicating factor of reversal of seasons.

Fortunately my first experiments with these intriguing strangers were made before reading either discussion, so that I started with my confidence unshaken. While little has been attempted so far, and less accomplished, the results have been decidedly more encouraging than those from European gentians, primulas, and androsaces.

First to arrive in my garden was the lemon-yellow *Myosotis Traversii*. As small seedlings, plants in the open survived the terrible winter of 1933-34, when local reports placed the minimum temperature at anywhere from thirty to fifty degrees below zero. Whichever figure may be the more accurate, the weather was cold enough to test the endurance of any plant. *M. Traversii*, growing in ordinary light soil in sunny positions in the rock garden, flowered the next June, continuing intermittently until late autumn, and averaged about ten self-sown seedlings per plant. Most of the old plants came through the second winter and flowered profusely until the terrific rains in July destroyed all except a few of the smaller seedlings. The flowers are rather small and cup-shaped, and the charm

of the plant lies more in its novelty than in its own merit.

This is not the case, however, with *M. decora*, which puts out several prostrate branches set with thick, rough, greyish leaves. The exquisite forget-me-nots of purest white with golden anthers are produced singly and, this year at least, rather sparingly. The plant is curious in its behavior, for while it grows in nature in limestone gravel, here it is really happy only in a heavy soil rich in humus, a soil that delights the Anemones of the Pulsatilla group. Once obtained, it is easily multiplied by cuttings of the stems, which root as they go.

Of the other two species which I have tried, the report is less favorable. The single seedling of *M. uniflora* perished in its first winter, whether from cold or slug I do not know. Of *M. macrantha* only one plant, in a north crevice, has lived through this summer, although it wintered well in several soils and aspects. Its flowers are large, with a tube three-quarters of an inch long. At first glance they seem ugly, greenish brown, but on closer examination they are quite fascinating, flecked with gold, and with golden anthers far down the tube. While I have reason to believe that these species are all accurately named, neither *M. macrantha* nor *M. Traversii* grows as large as it should, the former lacks the fragrance ascribed to it, and all three have preferred situations quite different from their natural ones.

Seeds of a number of alpines sent me immediately after the 1934 harvest were sown on their arrival in early June. Only the *Myosotis* and two



plants of *Gentiana saxosa* appeared the first year, and the latter, very tiny, did not come through the winter. This year a number of species germinated, and *Gentiana corymbifera* has developed into stocky plants an inch high, in a year when most seedlings made less than half their normal growth, while the present stock of *G. saxosa* is about half as large. *Ourisia macrocarpa* is still very tiny, perhaps an eighth of an inch across, while a few seeds of *O. caespitosa*, *Wahlenbergia albo-marginata*, *Hebe linifolia*, and *Raoulia grandiflora* germinated and died. As the *wahlenbergia* had made some growth before it vanished, I am

afraid that its loss must be laid to soured soil and careless handling.

Although the plants mentioned are but a negligibly small sample of those now available, they show that it is not beyond ordinary ability to germinate the seeds, and that at least some of the species (not merely those from high altitudes, as *Myosotis decora* stays below 3,000 feet) may be expected to survive a severe winter. I hope that other gardeners will feel sufficiently encouraged by these slight efforts to join in the exploration of a rich and curious flora.

Groton, New York.



## A Book or Two

*The Book of the Seashore.* By Howard J. Shannon. Doubleday, Doran Company, Garden City, N. Y., 1935. 281 pages, illustrated. \$3.50.

This is not a garden book in the strictest sense of the word but it is just the sort of book that every gardener should read in order to see the fullness of life one can find by really learning to hear and see. The author is a naturalist with long years of seeing and knowing behind him and a particular focus of attention on life along the shore. The book is worth reading for itself, even if plant life is the least important element of the discussion, but to the reviewer, there is the more important element of the seeing eye and understanding mind.

*Flower Arrangement.* By F. F. Rockwell and Esther Grayson. The Macmillan Company, New York. 137 pages, illustrated. \$3.00.

Almost any flower arrangement book is worth a first reading because each author seems to bring to his or her work a special selective sense that illumines one or more phases of this interesting subject. For the present reviewer the interesting thing in this book is the analytic diagrams which are accompanied by equally interesting discussions. These are simple and reduce the elements studied, whether of plant material or container, to the essential elements to be considered in making the designs. The discussion of "Types of Arrangements" is also valuable although, in the opinion of the reviewer, some phases are omitted, particularly in the discussions of modern and modernistic designs.

More than one reading of this book will be necessary, however, to find all the valuable bits of advice, the gently expressed principles in this work. No final inflexible formulae are here but much sage advice.

*Gardening in the Greenhouse.* By Anne Dorrance. Doubleday, Doran Company, Garden City, N. Y., 1935. 129 pages, illustrated. \$1.50.

This is not a greenhouse guide for a professional who wants commercial production on any phase of garden work. It is rather a most readable text describing the pleasures and possible difficulties of the home gardener who wants flowers through the winter, of a garden character rather than of florist's types. Don't read it unless you want to be tempted to a greenhouse of your own or else read it and succumb to continued garden dissipations.

*Paxton and the Bachelor Duke.* By Violet R. Markham. London, Hodder and Stoughton, Ltd., 1935. 350 pages, frontispiece, plates. 20/ net.

Many gardeners will be interested in this biography, written with candor and an admirable degree of detachment by the granddaughter of Sir William Paxton, who was farmer's son, gardener of Chatsworth, editor of the *Horticultural Register* and the *Magazine of Botany*, co-founder of the *Gardener's Chronicle*, man of business, traveller, designer of the Crystal Palace, Member of Parliament. For more than thirty years he was gardener and agent to the Bachelor Duke, William Spencer, sixth Duke of Devonshire.



Simple, forthright, practical, of varied interests and driving energy, he is in vivid contrast to the Duke, who, endowed with wit, charm and generosity, was at once less forceful and much more complex in nature; certain sides of his character Paxton never understood. It is, however, the unique and nearly lifelong bond of personal feeling between these two men so far apart in fortune, which gives unity to the book, even more than the devotion which they both gave to the beautiful gardens of Chatsworth. The tale will take the reader into many unexpected byways, and will illumine many aspects of the Victorian scene. Nothing is glossed over, not even a depraved infatuation for the *Araucaria excelsa*. Gardener and Duke are here "in their habits as they lived," and their histories are worth the reading, for they added to the world's beauty.

M. P.

*Illustrations of North American Pitcherplants*, by Mary Vaux Walcott.

Published by the Smithsonian Institution, Washington, D. C., 1935. Quarto. Price \$25.00.

From the earliest times the pitcherplants, conspicuous, strange, and beautiful among the wild flowers of America, have excited the wonder and admiration of those who knew them.

With their water-holding leaves and their evident equipment for attraction, trapping, holding, and killing insects, they have always stimulated human curiosity. To the older interest has now been added the knowledge that some, at least, of the species digest the insects they have caught and utilize the product for the plant's own nourishment. Mrs. Walcott now publishes fifteen full-page colored illustrations covering all the known North American species, each with a descriptive text, and to this have been added maps and text by Dr. Edgar T. Wherry, showing the geographic distribution of the species, and a description, by Dr. Frank Morton Jones, of the marvelous interrelationship between pitcherplants and insects, the insects that they catch and utilize for food, the insects that pollinate their flowers, and the insects that live and thrive in the same pitchers that kill and digest other insects. Mrs. Walcott has produced a book that not only is a work of art, from the beauty and fidelity of its illustrations, but is a fountain of scientific knowledge regarding these amazing plants, and she also has told how they may be grown in our greenhouses, so that we may watch them at their insect-catching operations.

FREDERICK V. COVILLE.



## The Gardener's Pocketbook

### *Androstephium coeruleum* Greene.

Several years ago a collector of native plants in Texas offered bulbs of this plant with the note that the flowers were like blue daffodils in miniature, enough of a statement to precipitate an order. Unfortunately the difference in climate between Texas and Maryland was too great for a successful issue but the rather brodiaea-like corms arrived and eventually showed slender stalks with a small head of lavender-blue flowers, with petals and inner-parts arranged in a somewhat narcissus-like fashion. After that, nothing more.

This year the plant appears in a Colorado list and once more the flat corm-like roots have been consigned to Eastern earth—this time in a cold frame in the hope that their first flowering will be sure enough to warrant a picture for our pages later on, even if followed by the still later admission that it will not do for the North, or even the northern South.

Much more closely related to alliums and brodiaeas than to narcissus, it is to be hoped that some place will be found to its liking, since both brodiaeas and alliums are valuable additions to the warm, dry borders here.

### *Tigridia pavonia* Ker-Gawl.

(See page 322)

These brilliant Mexican bulbs of the iris family are often spoken about but not as often grown as they well might be. Two objections are sometimes offered, the first that each flower lasts but a day, and second, that one must lift and store them with some care.

As the bulbs are edible, both for man and beast, the plants must be guarded both in the garden and in winter storage.

Best results come from bulbs planted in fertile, moist and well-drained soil in a situation where sun will be free, but where beating wind will not overtake them. In such places the bulbs will send up fine sheaves of plaited, palm-like leaves and tall, sometimes branched stalks, from whose sheaths, flower after flower will emerge. As can be seen from the picture, there is a central bowl more or less blotched with color and three large triangular petal lobes. The type is a brilliant scarlet, with a bit of yellow ground blotched with dull, somewhat brownish crimsons. The variations on these bits are endless for the blotching may be reduced to a minimum or it may run far out on the lobes. The lobes themselves may be pinkish rose, salmony, clear yellow, or even white, and the blotching may be reduced to nothing at all, leaving a yellow ground in the yellow and white forms.

Propagation is by seed which comes rapidly, or by the division of the roots before planting in the spring.

Planting should be done as soon as danger of frost is past, but if delayed, flowering will be correspondingly delayed into the season when frosts are hazardous. Digging should come as soon as frosts have damaged the leaves. Lift the whole plant; dry carefully, but not enough to shrivel the bulbs; cut off the tops but leave enough to serve as an easy means of handling; store in sand that will be cool and moist but not wet.





*Lilian A. Guernsey*

[See page 321]

*Tigridia pavonia*



*Wintersweet and Jasmine.*

No November is considered entirely satisfactory unless there is at least a flowering bough or two upon the wintersweet (*Chimonanthus fragrans*). In spite of the lazy habits of its cousin, the sweet shrub, the wintersweet is by no means so docile and dies back to the ground often enough in its early life to make one dubious, but eventually a tougher root system prevails and branch by branch the top forms, bearing strong laterals with large leaves rather harsh to the touch. If frost comes early these usually drop after turning an indifferent yellow, leaving bare twigs studded with round, dull-brown buds that are to unfold their yellow petals.

Although a later season is more orthodox, my own plant always flowers in November and fills the frosty air with its heady perfume—that of old Chinese narcissus. In Japan it blooms in January or February and is called the *Robai* (yellow plum) because it comes just before their famous plum-blossom season.

Jasmine flowers in November, on the other hand, are a mixed delight, for if they come now there will be fewer to come in March, when they are even more needed and appreciated. Nevertheless, a lusty plant or two of naked jasmine planted in a warm corner will usually yield its unseasonable crop at times when a few sprays for the house will be doubly welcome, making with Christmas roses, johnny-jump-ups, Elwes' snowdrop and such the delightful nosegays of the end of the year.

*Scilla autumnalis* L. (See page 324)

There are squills and squills. If your ideas are limited to the peacock blue of Siberian squills, you might not guess this fragile autumn-flowering

bulb to be a squill. As the illustration shows there is not very much of it, but its unusual time of bloom alone would insure its use in any garden where the curious and beautiful find a place.

The bulbs are of no great size and produce more or less stringy masses of lax foliage, above which rise the nodding stalks of pinkish lavender flowers, deeper in bud and paling as they open. When first planted the bulbs give only one stalk of bloom and the effect is too meagre to appeal, but as they grow old and wax fat a fountain of flower stalks makes the appearance welcome.

When first obtained, a few bulbs were kept in a pot in a cool pit where their flowering was untouched by autumn rains and took on that added beauty that all flowers find in protection from the uncertainties of weather. Washington, D. C.

*Narcissus Notes.*

Although the season for planting narcissus is long passed and the new catalogs are not yet ready to stir one's imagination for 1936, this time of year is the best for thinking back over the last year's notes to lead one to preliminary choices for the new year.

Among the brilliantly colored flowers that have been in the garden long enough to show that they will be certain to succeed and make a permanent place for themselves one might easily choose Killigrew. Here, this grows as vigorously and floriferously as Bernardino. Possibly it is even more free of increase and flower, which is high praise. Each year it sends up on tall stems its fine yellow flowers with their orange-frilled cups, splendid for cutting and excellent for showing. Garibaldi, with rather more moderate growth, seems likely to become a





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*Scilla autumnalis*



standard variety with deeper yellow perianth and redder cup. Among the brightly contrasted flowers it is less expensive than most, but holds its own well against all save the most expensive novelties, most of which will not be common garden plants for some years to come.

As a flower of particular distinction and delicate charm, one may safely choose Fairy Circle. It is most easily described as a poeticus-like Leedsii of white, with a narrow edge of cerise on the flat white eye. Like the Leedsii and *poeticus* varieties, it is free of increase.

Among the large and brilliant yellow trumpets a word should be said for Aerolite, which has charmingly smooth flowers of clear yellow that are distinguished by their rather slender trumpets in contrast to the usually larger trumpet styles.

Another variety of vigor and floriferousness is the Barrii Calcutta, which is mid-season to late in flower. Its perianth is a creamy-white and its cup a brilliant orange shading to red on the edge.

A very good late white trumpet is the Irish variety, Kenbane (pronounced Ken-bann) which is almost the last of this type to flower, showing enamel-like white flowers among lush blue-green leaves.

*Narcissus*, Naxos (See page 326)

Of garden narcissus there are no end and the claims put forward for each one are almost unbelievable in their warmth and positiveness. The present comment is doubtless as prejudiced or partisan, but surely the picture will speak somewhat for its own defense.

Originated some years ago by the Brodie of Brodie, this Giant Leedsii variety has made slow progress in the garden world which seems rather cur-

ious for its growth in any but very dry situation is regular and free and its tall stemmed flowers open early in the season when the garden is over-full of yellow trumpet varieties.

Technically placed in the Giant Leedsii Section, it might be considered by gardeners as a white trumpet for its fine, trumpet-shaped cup is only an iota short of being a trumpet in fact. The color is a uniform white, not a glistening greenish white, as in Beer-sheba, but an enamel-like white that is quite its own. The flowers are very lasting on the plant and unless there is a day of unseasonable heat, may be counted upon for several weeks.

For such as raise seedlings, it may be recorded that its pollen is highly fertile and that it yields good pods of seed. From Great Britain come reports that its progeny are excellent.

#### *Autumn-Flowering Bulbs, Reminders.*

It is not necessary, perhaps, to remind readers of the value of autumn flowering crocus species, since catalogs are giving more of these each season, but perhaps a crocus-lover will be forgiven if he mentions once more *Crocus byzantinus*, more often thought of as *C. iridiflorus* and *C. medius*. The first flowers soon after *C. speciosus* and is most interesting because the inner three-perianth segments are small, giving the flower an appearance something like *Iris unguicularis*. The second has large, rounded flowers of a deep warm purple that is very brilliant.

Showing about the same time are the fine flower-heads of our native *Allium stellatum* already mentioned in this journal. Blooming through September and well into October, this plant is most welcome for its heads of rosy-purple flowers are fully two inches in diameter and last through





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*Narcissus, Naxos*



early frosts, even to a safe maturing of their seeds.

Of *Sternbergia lutea*, nothing need be said, save it is appearing in more and more gardens, but a word should be said for the equally old and well-known *Nerine sarniense*, which experience shows is much hardier than might be supposed. Its brilliant crimson flowers in late summer or early autumn are unbeatable, so choose a warm spot for it if you live north and see if it will not do for you too.

*Tricyrtis hirta* Hook. (See page 328)

Two questions that often arise in gardening are answered in this plant for it will grow and flower in shade and it does bloom late in the autumn. In spite of its odious name of Japanese toad-lily, this is a plant quite worthy of attention.

In a good soil, rich in leaf compost and with enough coarse sand to give the prescribed grit, it will soon make generous clumps of arching stalks that bring to mind the curving habit and leaf carriage of our own Solomon-seals. The leaves, however, are quite different with their obvious venation and their covering of downy hairs that give the name significance.

After a disappointingly long wait, the flower buds appear in the axils of the leaves and in a leisurely fashion, as if no frost could ever overtake them, unfold the curious flowers. The ground color is a creamy ivory white over which are laid the dottings and specklings of a warm lavender purple. The structure of the column of pistils and stamens does not show clearly in our picture, but is worthy of examination.

Flowering so late in the season, the plant is rarely able to complete the ripening of seed, but clue to propagation by another method was given by a plant that was broken and rooted

where it touched the earth. Cuttings taken in early autumn usually root well, forming a fat bud at each node, which pushes into growth in spring.

There are other species in this genus that are worth attention although they offer only minor variations in color and pattern. As some of them come from southern Japan, it remains to be proven how hardy they will be to the cold, but two species, *formosana* and *kotoensis*, were particularly noted this summer in which the flowers were less speckled; were flushed with clear lilac on the tips of the petals and accented by pinkish brown on the central column.

Washington, D. C.

#### *Broad-leaved Evergreen Trees.*

For northern gardens one must depend almost entirely on coniferous trees for winter greenery, but for the South and its northern limits, there is an enlarging group of evergreen trees to be considered. There was a time when the garden in the upper part of the South planted only our American holly, and the large evergreen magnolia. Later, he began to add *Ligustrum lucidum* and *L. japonicum* in the hope that they would grow safely and beyond the dimensions of large shrubs. Of the two, the thinner-leaved *lucidum* has proven more liable to injury, although both suffered sadly in the last two winters.

*Ilex cornuta*, mentioned many times in our magazine is often found in gardens now, but is still too young to show how large a tree it may become in the North. In places where it can ripen its growth and be protected from the earliest winter morning sun, this Chinese holly is worth a trial. *Ilex Pernyi* is perhaps a little hardier but does not promise to become a tree if one may judge its early growth. Its





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*Tricyrtis hirta*



exquisitely formed small leaves have a distinct charm of their own. *Ilex rotunda* where it will grow will probably be worthwhile for its smooth, almost spineless leaves, but will probably be disappointing in its rather small red berries. *Ilex fugisanensis* is still too small a plant to deserve more than mention, but young plants are undeniably evergreen and appear to be quite hardy to cold.

One wonders a little if by careful pruning and cultivation, *Stranvaesia Davidiana* might not be forced into the habit of a small tree. Its early vigorous growth as a shrub is so often marred by the extraordinary length of the annual growths which wave about like bare whips before any lateral branches are formed, that the experiment should be made. As its leaves take on pleasant tints of purplish-bronze during cold weather it would add a new color note in mixed plantings. It is, however, damaged by temperatures that often go below zero.

One could hope that some patient gardener may yet be found who will hunt out the absolute northern limits, both of our native live oak and Carolina evergreen cherry and grow seedlings among which some might be found to carry the limits even farther north. If also, there could later be added some of the evergreen forms of *Castanopsis* from the Orient, we should have another group of evergreens to diversify the winter scene.

*Ilex purpurea* Hassk. (See page 330)

In recent years more attention is being paid to hollies, not only in the selection and vegetative propagation of the best forms of our native *Ilex opaca*, but the search for other species with which to augment our collections.

So firmly rooted in our mental

images of holly are the spines that line the margins of the leaves in familiar species, we scarcely recognize as hollies, those forms that have unarmed leaves. For several years the handsome plants of this species growing at the Barbour Lathrop Plant Introduction Garden beyond Savannah, Ga., have been fruiting freely, producing fine scarlet berries so close to the ends of the twigs as to be particularly conspicuous. The leaves are of a fine dark green, untouched by scorch or sunburn, and so far undiscovered by miners. Cut and treated like ordinary holly in decoration, the plant seems quite as satisfactory as any.

The ultimate limits of its hardiness are undetermined. Young plants have shown no damage near Washington, either in the severe winter of 1933-34, or 1934-35 more than the usual damages to leaves that show in other hardy species. As it is of Japanese nativity, it may prove to be another broad-leaved evergreen tree for our winter landscape.

#### *Eupatorium Bruneri*

The familiar Joe-Pye Weed of our roadsides, *Eupatorium purpureum*, has an interesting Western relative, introduced into cultivation during recent years as *Eupatorium Bruneri*, which is destined to make a permanent place for itself in our gardens.

Less robust in habit than *purpureum* is this newcomer, growing about three feet in height, and carrying itself somewhat more gracefully. It is, however, still a large plant, particularly suited to the hardy mixed border or the wild garden. When massed against dark leaved shrubs, its real garden value is best appreciated.

The flossy flower clusters of *Bruneri*, terminating the leafy stalks in late summer, are its chief attraction. In





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*Ilex purpurea*



coloring they are of soft purplish tones, very striking and beautiful. When cut and combined with leaves of purple plum and sprays of buddleia in loose arrangement for a large vase or basket, this plant is raised to a place of outstanding merit as a cut flower.

*Bruneri's* tastes are simple. Ordinary loam in a moist, half-shady position are its cultural requirements. It is planted either in spring or autumn, a foot to fifteen inches space being allowed between plants. For the greatest beauty in the border, and to keep it from encroaching upon the territory of other less invasive plants, it is usually lifted and divided into small sections every year or every second year.

All in all, this member of the Joe-Pye group is a native plant worth knowing.

CLAIRE NORTON.

Silver Plume, Colo.

*Melaleuca leucadendron* L.

(See page 332)

Nearly every winter visitors to Florida will sooner or later encounter this introduced tree, known as the cajaput, that has made itself so much at home as to be almost an invader in some spots. Remarkably tolerant of wet soil and even of soil in which salt is present, it is more than useful as a variation from the equally omnipresent casaurina. It makes a pleasant small tree that can be planted freely to form informal hedges and low windbreaks, although it is by no means so deep rooted that it can withstand gales. The foliage is evergreen, somewhat aromatic when crushed and the flowering twigs are lined with blooms where masses of white stamens remind one of its cousins, the brilliant crimson bottlebrushes. As the bees find these

much to their liking, the trees are filled with humming for the weeks of summer flowering.

After the blooming, follows the development of the fruits, beautifully made and sometimes cut off to serve as decorations for the craft baskets of the region. In each are myriad seeds, all of which germinate freely and make millions more of trees to fill the country side.

The most talked of feature of the plant is the bark which suggests birch bark in its habits, but is of a more delicate texture and a cork-like surface. Its resistance to fires often saves the trees when growing in grasslands that are burned over.

*Begonia Evansiana*

This species mentioned in Mr. Robinson's article has another interest for gardeners in colder parts of the United States, for to all practical purposes it is a "hardy" begonia. So far no records have been discovered as to the ultimate limits of its hardiness in the North, but the recent winters that have proven such a test have left it unscathed here where the thermometer has fallen below zero.

For the gardener who can supply an ample addition of leaf-soil and a reasonably constant moisture in the soil this plant makes an invaluable perennial for autumn-flowering, for it begins in September and continues until frost, with a fine display of clear, rose-pink flowers, that show well above the splendid yellow-green leaves.

Usually seed ripens before frost but there is no need for sowing seed since every year, the crop of bublets that fall to earth from the leaf axils, somewhat in the fashion of the tiger lily, sprout and make an indefinite supply of young plants. If these are transplanted promptly, even into per-





*Michael Carron*

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*Melaleuca leucadendron*



manent spots of properly prepared soil, most of them will flower the first year, although not so profusely as older and more established plants.

In this latitude the flowering overlaps that of Japanese anemones, *Eupatorium coelestinum* and the earliest chrysanthemums. Like the anemones, our plant will do very well with only partial sunshine so that it can always be considered for shady places, if its requirements for moisture are not forgotten.

*Euonymus Hamiltoniana* Wall.

(See page 334)

Nearly all the spindle-trees can be remembered as of greatest value in the autumn, for no matter how interesting or how late their flowering may be, the flowers themselves are rarely showy in the sense of the word that brings to mind lilac or crape myrtle. Autumn, however, brings a different story for the fruits that have been half-hidden in the leaves commence to show brilliant colors and break open to show even more brilliantly colored seed that hold their own in competition with the flamboyant foliage.

This plant, from the Orient, is rather tree-like in its habit, with vigorous growth, green-barked young shoots, fine foliage that often bleaches to ivory white before turning pinkish. The fruits, which show clearly in our cut are pinkish to pink, and the seeds they disclose are coated with a scarlet orange, fleshy aril that gives a startling contrast. The leaves eventually fall, leaving the fruits in full display until severe weather sports them.

All the euonymus are hungry plants and their masses of fibrous roots can rob all the soil about them. For this reason their company must be chosen with some care. Most of them are attacked at times by scale insects so that

one must watch to discover when a winter spray is needed to keep the scales in check.

*Mentzelia decapetala*.

Do you want something very much out of the ordinary? Then try *Mentzelia decapetala*, or as it is called where it grows wild on the chalk hills in the western plains, "Chalk Lily," even if it is not a true lily.

It is a large, stiff, tree-like plant growing in pyramidal shape, with the lower branches just clearing the ground and all thickly twigged, each tip a big, upright, twisted candle of a bud which opens, a bit before sundown, into a gorgeous, cactus-like flower of delicately fragrant, creamy whiteness. The flower is from three to five inches across, with ten petals and hundreds of thick stamens. It is an experience to be remembered, to watch the *Mentzelia* buds unfurl, they do it so rapidly that one is apt to miss the treat if he is not careful. You look at them and they are all rolled tightly and the next thing you know there they are wide open.

Each flower lasts for several days but closes in the morning before the sun gets hot. And it is wonderfully generous with its bloom as the plants are literally loaded with buds and flowers. The flowers get smaller as the hot season advances but even in the drouth, when all of the leaves were killed, there were still a few brave blooms after frost. The seed, which look very much like a tomato seed, are formed in an upright, open-ended pod. The leaves are scattering, large, oval and deeply cut, a dusky green, rough and unpleasant to the hands or clothing. *Mentzelia decapetala* appears to be a biennial, though, if they get an unusually early start and no set back in their growth, they will





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*Euonymus Hamiltoniana*



bloom the first year and that is the end of them. Ordinarily, though, they grow along slowly for the first year, live unprotected through the most trying winters imaginable, and start off growing with a snap in the spring. If you ever see Chalk Lilies blooming in the garden on a moonlight night I am sure you will agree with me that you have found something decidedly worth while.

*The Prairie Wind Flower.*

Every one loves blue flowers; but there are blues and blues. The Gentian, so much sought after, and so discouraging for the most of us, is usually considered the gem of blues. To me the cold blue of the Gentian is not to be compared with the warm, soft shade of the prairie "daisy." I have never known what Anemone this Wind Flower is, but I do know of its beauty and homey, garden adaptability. It will snuggle down, and slowly increase, in any spot where it has the sun and good drainage, provided you let it alone and keep other plants from smothering it out. Then early in the spring if you do not love this big, wide open, intensely blue "daisy" with its golden heart you are indeed hard to please.

This Anemone grows from a tiny irregular shaped tuber. The leaves are few, three or four at most, dark green and deeply divided, on short stems; and are always up in the fall if there are to be flowers next spring. If the fall is wet there are spring "daisies," if dry you can not even find the plants, but they are there ready to bloom whenever the tubers get moisture enough in the fall to build their surprisingly large number of big, dollar-sized flowers. The flowers open on about three inch stems which gradually lengthen until the big seed puff is often waving nine or ten

inches high. The Anemone is a sun worshiper and only stays open when the sun is warm, but opens again for many days, which, together with the large number produced from each tuber, makes the blooming season last for weeks. There is nothing prettier for a colony in the rock garden than this Wind Flower. The pity is that it is so little appreciated, for cultivation and road building is fast driving it from the old buffalo wallow indented prairies. This same Anemone in white with a lavender reverse to the petals is pretty also and much more plentiful than the blue. One finds them growing together quite often.

ALBERTA MAGERS.

Sterling, Kans.

*Cytisus praecox* Bean. (See page 336)

Nearly everyone knows or knows of Scotch broom and in this era of rock gardens there are many who know some of the dwarf species of *Cytisus* and some of the brilliant hybrids as well, but one does not often come across plants of this hybrid bred from *C. multiflorus* x *purgans* which always calls for comment in the garden here.

As the plant came originally from a New England nursery it is presumably hardy to cold and as it has survived here for years under our wide extremes of heat and cold, it must certainly be classed as tolerant.

After a slow start it soon grew its full height of four feet and commenced to fill out its fountain-like head of slender gray-green branches that are clothed in spring with silky leaves and hundreds of creamy white flowers of the size shown. In books one is always reminded that these flowers have faintly unpleasant odor, but no one bothers to say that—you must bury your face in them to find it out! So,





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*Cytisus praecox*



let it be commended for a pleasant foreground spot where it will not be crowded, and where it will make an unforgettable picture early in the spring. The only "don't" to be recalled is that, like its kind, it does not enjoy transplanting, so don't be vacillating about choosing its permanent position.

*Callicarpa Giralddiana* Hesse.

(See page 338)

Each returning autumn brings a keener interest in fruiting shrubs, which brings to the landscape almost as much beauty as the flowering shrubs of spring and early summer. So often these shrubs have fruits of red or black, that the appearance of a finely berried shrub with fruits of pinkish violet is occasion for remark.

Within our own states, particularly through the Southeast, there is the common *Callicarpa americana* with its coarse leaves, somewhat stiff habit and masses of dull violet fruits. More common in gardens is the more graceful oriental species, *C. dichotoma*, but less often does one come upon the Chinese, *C. Giralddiana*, the subject of this note.

Unlike the *C. dichotoma* which was once more commonly called *C. purpurea*, with its slender growth and gracefully over-arching branches, this species forms a stiff and upright shrub up to ten feet with coarse foliage, less pleasant than that of *purpurea*, but of better habit than *americana*, with more or less usual cymes of pinkish flowers that make no special show in mid-summer, and with clusters of pinkish violet fruits that are clearly shown in the illustration.

Apparently the plant is quite hardy to cold but it should be remembered that it flowers on new wood so that a

certain amount of winter-killing is not serious. Doubtless it will never be a shrub chosen to replace the more conspicuous plants in the shrub border, but it makes a pleasant variation among them and furnishes charming sprays of berries for cutting and combining with autumn flowers, chrysanthemums, Japanese anemones and late bloom from Chinese delphiniums being obvious examples.

Washington, D. C.

#### *Of Roots and Other Matters*

In gardens where bulbs are favorites, there comes a time in late autumn when the gardener wonders how he ever came to buy so many new ones or why he ever undertook to dig and increase so many of his old bulbs in one and the same season. Then it is that the diversity of the bulbs themselves is truly welcome for after planting several thousand narcissus or tulips, it is a pleasure to open a cornucopia filled with buckwheat shells and shake out the dozen reticulated corms of some crocus species or a sack of equally handsome bulbs of *Iris reticulata*.

This year the variations here were several and included some plants not strictly bulbous, but loosely grouped there since they are sold as dormant roots of a more or less bulbous appearance in bulb planting time. After years of procrastination, various bundles of trilliums arrived. What curious thickened rootstocks they have, with long snout-like buds for next year's growth and what strange mop-like masses of feeding roots.

In the same package came the huge white branched rhizomes of the Giant Solomon's Seal so large as to make our species native here seem a pigmy and the little uvularias, the merest fragments.





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*Callicarpa Giraldiviana*



Of course in the bulb-filled garden one usually digs some up while planting new ones and in these operations, more than one nest of *Scilla campanulata* was tumbled to the surface white or earth-stained with little fringes of new roots encircling their sides.

Hyacinths came in for attention this year, fat bulbs with chaffy covering that always sets one to wondering why the bulbs of colored varieties might not be bluer for the lavender and purple sorts and pinker for the pink to magenta kinds instead of an almost uniform metallic magenta. Some day this garden must have a few bulbs of every named sort to see if there are subtle differences in bulb color.

A few seedling daffodils had to be disturbed and once again their downward progress was noted in the curi-

ous shape, like slender Chinese bottle gourds.

Brodieas once more were added to the collection of those already here, strangely disproportionate in their sizes as compared to the inflorescences and all beautifully coated.

Although no bulbs, the curious roots of *Iris stolonifera* and *Iris Korolkowii* always delight with their long arm-like branches each swollen at the tip with a fat bud for next season's growth.

And then one turns to lilies. What chance is there for these somewhat shrivelled outer scales to fatten up and resume their normal functions? And why is this species tinted yellow, that one reddish and this remain as white as ivory? Bulbs and roots, no two alike and yet all charged with the same eventual purpose.



## To Set the Phloxes in Order

In Dr. Wherry's paper "Our Native Phloxes and Their Horticultural Derivatives," appearing in the July issue of the magazine, various errors crept by, for which the author records the following:

<i>Page</i>	<i>Column</i>	<i>Line</i>	<i>Word</i>	<i>Change to be made</i>
209	1	16	5th	for "such" read much
209	1	30	4th	for "leaf" read leaf-axils
209	1	last	8th	for "B" read <i>P</i>
212	2	24	2nd	for "cones" read clones
213	1	42	6th	for "violent" read violet
213	2	7	7th	for "whem" read when
214	2	23	6th	for "there" read these
215	2	10	1st	for "sorolla-" read corolla-
216	1	24	4th	for "either" read glandular or
216	1	41	6th	for "Far-" read Fer-
216	2	39	1st	after "pilosa" insert $\times$
218	2	5	1st	for "AMOENA" read <i>amoena</i>
219	2	19	1st	delete "FIG. 8"
219	2	25	5th	for " <i>Hort.</i> " read Hort.
219	2	38-39		change lines to read: on comparing the illustrations, that of <i>P. stolonifera</i> serving for <i>procumbens</i>
221	1	9	4th	for "inflorencences" read inflorescences
223	1	9	4th	for " <i>P.</i> $\times$ " read $\times$ <i>P</i>
224	2	5	5th	for "continuoesly" read continuously
224	2	10	3rd	for "the" read this
228	1	21	6th	for "an" read on
230	1	29	4th	after "applied" insert to plants
230	1	32	4th	for "glaborous" read glabrous.



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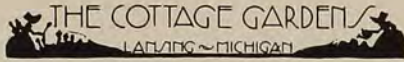
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or Secretaries, who do not receive our Autumn Bulletin, which will reach them annually before Oct. 15th, are kindly requested to acquaint us of the fact at their earliest convenience, which will enable us to include them in our mailing list, and will ensure their receiving a copy of the questionnaire in December.

**Prospectus, sample pages and further information may be had from the EDITORIAL AND PUBLISHING OFFICE, P. O. Box 8, Leiden, Holland.**