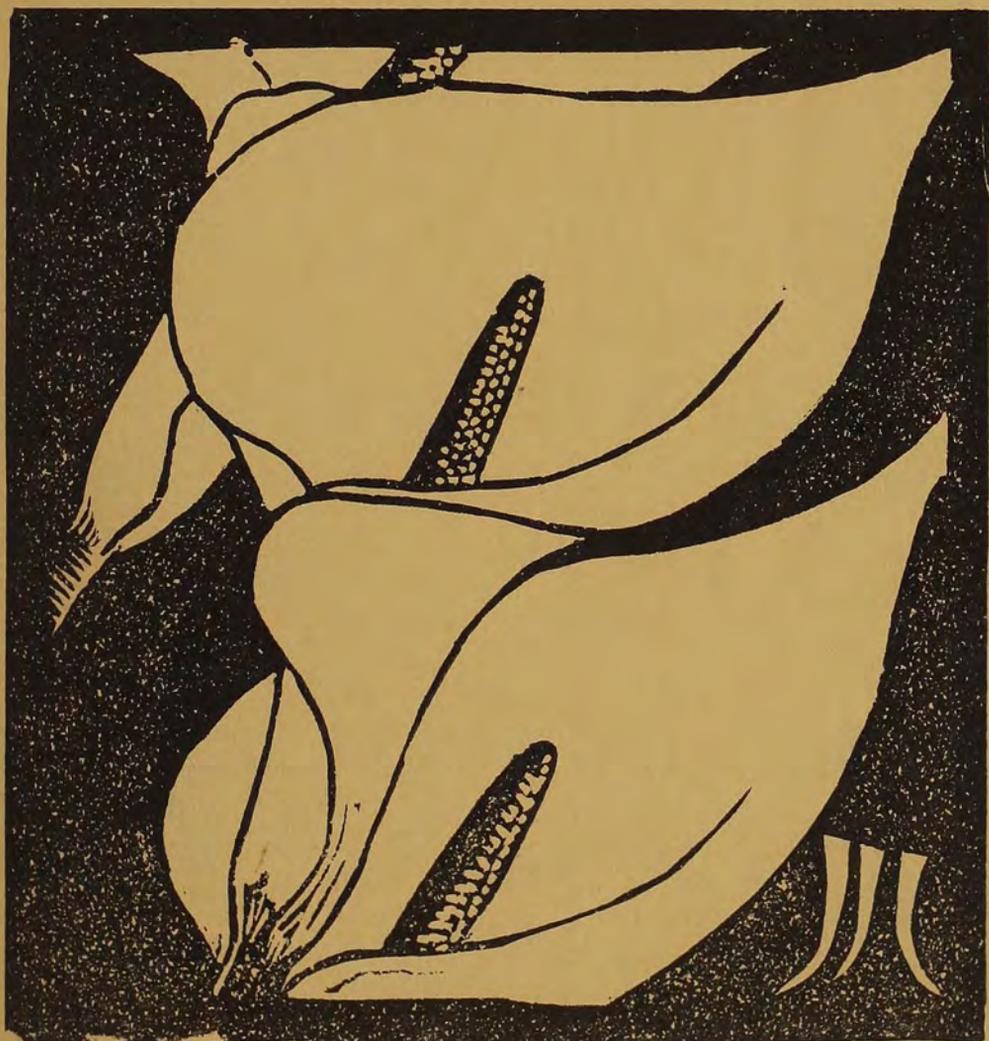


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OCTOBER, 1938

The American Horticultural Society

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Walter B. Wilder

The Birch Walk

Color in the Winter Garden

HELEN M. FOX

EVERY year it is a fresh surprise, after the leaves have fallen, to see how full of interest the garden is through December, January, February and into March, months supposed to be bleak and dormant.

The trunks and branches of the trees stand revealed in patterns against the sky and the scene is drawn as if with pen and ink or an etching tool, in contrast to the lush textures of Summer which seem to be rendered with oil paints.

Yet in Winter the lines are all not black nor even brown and gray. On the contrary, many of the branches and twigs are vividly colored. The canes of some of the dogwoods are magenta, maroon or yellow, and the twigs of the willows are brilliant yellow or orange. The broad-leaved evergreens such as the holly, laurel, rhododendron, pieris and leucothoe have glossy foliage and the coniferous ones, yew, *Arbor-vitae*, hemlock and pine are dark with slender leaves thickly arranged on their branches. The berries remaining on the shrubs seem more like remnants of Autumn than part of the Winter picture. Yet, some remaining in January and a few in March are yellow, red or grey. The meadows are colored a tannish pink or yellow ochre mixed with rose madder where the Virginia Bear-grass (*Andropogon virginicus*) grows, and the twiggy tips of the blue berries, some of the spiraeas, myricas and other shrubs are tinged henna, magenta or maroon. The trunks of the trees cast shadows so blue as to be almost purple across the lawn now straw-colored mingled with green.

Although there is actually much less color in Winter than in Summer, every note, every tint is emphasized, and stands out distinctly in the landscape.

When the Winter rains come and a thick fog floats low to the ground, the trees through the mists seem like shadows of themselves and one can understand how fairy stories and ghost stories originated in the Orkneys, in Ireland and Wales where fogs are frequent and of long duration. In the immediate foreground of the mists, the colors stand out brilliantly, more so than at any other time. The leaves lying on the ground are more intense henna, dark maroon, orange and burnt sienna than when they first dropped off of the trees.

Again when the snow covers the ground and has settled on the branches and leaves, the effect is of sharp contrasts and the wet limbs seem black against the whiteness.

Since we have grown intelligent about gardening, our planning is a far more complicated affair than it was in the days when the only phase of the plants' appearance to be considered was the color of the flowers. Now, in our maturity as gardeners, we must perforce bear in mind the direction of the branches and the color and quality of the leaves in order to have attractive compositions during the forty odd weeks of the year when their flowers are not in bloom.

When we are planning for winter effects with shrubs and trees it is particularly important to bear in mind their outlines, their habit of growth or what the French women in de-



Walter B. Wilder

Euonymus alatus

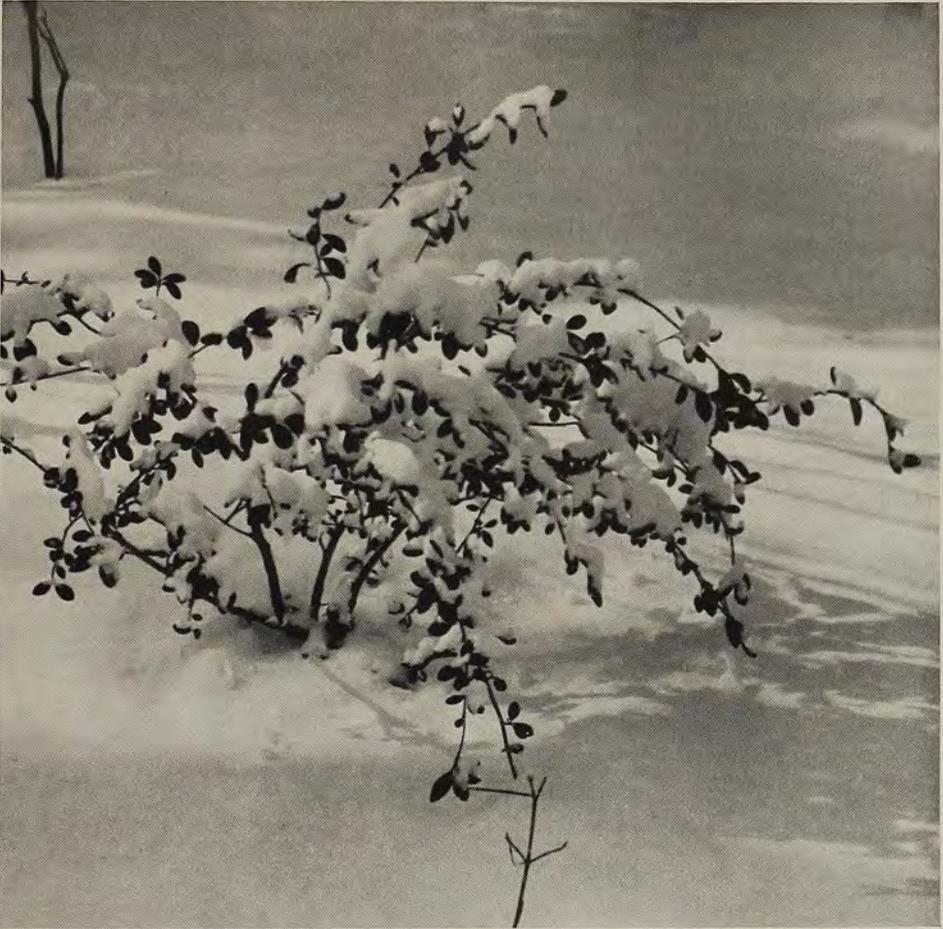
scribing their hats, call, "le movement." Weeping plants look better standing in front of and not behind upright ones, while plants with a fan shaped habit of growth should preferably be behind those with a dome-like spread. Too many upright growing plants grouped together will look like a thicket or a forest, and the shapes of the individuals will be lost, instead of emphasized as they are when the different shapes are carefully placed, each to its best advantage.

During the Winter every now and then it is warm enough to stroll in the garden with a pencil and notebook and take notes. Such a day came this past Christmas Eve. All my chores had been done, the house decorated, the packages all wrapped and piled beside the tree and there was a

short period of calm, preceding the arrival of the family from town. So I went out of doors to see how many plants I could find with color this Winter day.

At either side of the house, two *Taxus cuspidata aurescens* have spread wider every year so that now they alone suffice to furnish the "foundation planting." The branches have a horizontal movement and are very dark green and with a faint tinge of yellow. The little round cinnamon colored buds of next year's bloom on the male plants are thickly clustered on the under sides of the new growth.

In front of the wall holding up the terrace is a planting of *Ilex glabra*. The flowers in Summer are inconspicuous and greenish white, and the berries black. The value of the shrub



Walter B. Wilder

Cotoneaster lactea

is not in the bloom but in the fluffy much branched habit of growth and the evergreen glossy and somewhat leathery leaves. At Christmas and on until Spring, the leaves are shaded brown verging on maroon. Some are redder and others greener.

Under the ilex and in the shade, is a clump of *Helleborus niger* (Christmas Rose) now in flower and a little further along clumps of *Helleborus viridis* with greenish flowers coming in very early Spring. The Christmas Rose has been in bloom since mid-November and will keep on a few

weeks longer. The blossoms vary, some being whiter and others more tinged with rose and green. Mine are a creamy white with numerous yellow stamens and from the very centre, rises a pinkish pistil with spiral lines on it. The leaves are coarse, palmately divided and last all year, so the plant should be placed where their presence will not interfere in a Summer or Spring effect. The hellebores like shade and dampness and increase slowly. Sometimes a plant will take two years after it has been moved, before flowering. I picked a

few blossoms to show my city relatives, but like the little Snow Princess in the fairy story, the heat of the room was fatal to them.

I am not one of those gardeners who boasts about having bloom all the year around, for the very good reason that I cannot substantiate it with fact. However, on Christmas Eve, there were some blossoms on the *Erica carnea* and I read somewhere that if the shrubs are covered lightly with salt hay, they will bloom once in a while all Winter. The plants develop a rusty note in Winter, but bloom very early in Spring.

Hamamelis mollis sometimes flowers in January and at other years in February. It is not really pretty and can only claim a place in the garden because of its time of bloom and it is doubtful if that claim is justifiable. The young stems are covered with down and the old ones are dingy looking. The flowers are a dull yellow with slightly twisted petals, while the fragrance so frequently extolled is not apparent to my nose out of doors, while indoors the flowers smell like bitter almond. *Iris unguicularis* will flower in February. Except for *Eranthis hyemalis* (Winter aconite) a low yellow plant with buttercup like blossoms, and the snowdrops both coming in March, these are my only Winter flowering plants. For I do not count a stray out of season effort like a premature violet or pansy.

The fruits remaining, are the tiny apples on the Manchurian crabs, still thickly clustered and amaranth colored, but very soon a sleet freezing over them will break them up, and the shells falling onto the snow under the trees will paint it crimson. There are still a few black fruits on *Cotoneaster acutifolia*, bright red ones on the hawthorns, dull dark red ones

on *Aronia arbutifolia*, orange on *Eunonymus alatus*, white round ones on *Symphoricarpos albus* (Snowberry), grey on *Myrica caroliniensis* (Bayberry) and purple ones, much shrunk-en and harried by Winter weather on *Callicarpa purpurea*. If any of them are brought indoors, however, their shabbiness is much more apparent than when left out of doors. There is one exception as there always is, in the cerise berries of *Berberis Thunbergii* which are still stunning both outside and indoors, where they are being used as part of the Christmas decorations with branches of hemlock. The fruits of the multiflora and polyantha roses still persist and are a quite brilliant orange.

On the shrubs, just now, maroon seems to be the strongest color note. The foliage on many of the broad-leaved evergreens is tinted maroon during the winter. The leaves of *Leucothoe Catesbaei*, a native shrub spreading by suckers, and with racemes of lily-of-the-valley-like blossoms in early Spring have become a reddish maroon as are the buds of next year's blossoms. *Stranvaesia Davidiana*, an evergreen of the rose family, introduced from China thirty years ago and highly decorative with white flowers, followed by scarlet fruits, has its leaves now dyed a rich maroon. When cut and brought indoors, the branches last all winter. I have some standing in old hyacinth glasses, the color of egg-plant, and think them so stunning that I have selfishly brought them up to my own room where I can admire them for longer hours than I can downstairs.

The leaves of *Cotoneaster Franchetti* are green, shaded brown; later they will turn a less attractive brown, while those of *Cotoneaster lactea* have maroon blended in with the green. One



Walter B. Wilder

Cotoneaster salicifolia floccosa

of the handsomest shrubs in Winter is *Cotoneaster salicifolia floccosa*. The branches are maroon as are the willow-shaped leaves. There is something most satisfying in the graceful upward and outward spread of the branches and the angles at which the leaves are set upon them. So often I stand alongside of a group of shrubs all of one family, and try to analyze why one species is appealing when another almost like it, appears clumsy. The presence or absence of one-eighth of an inch, as with a woman at the end of her nose, is enough to make the difference between beauty and the lack of it.

Another broad leaved evergreen is the *Buxus microphylla* var. *japonica aurea* which seems to be the correct if somewhat lengthy name of a dwarfish spreading plant given to me as Korean box. It is hardier than most box and the leaves in Summer have a yellowish cast which in Winter comes forth out of its green hiding and in spots is quite definitely yellow. The leaves of *Buxus sempervirens* have a bronzy cast to them.

The foliage of the evergreen barberries are brighter colored than that of other shrubs. On *Berberis verruculosa* a low shrub with yellow flowers in Spring, the prickly glossy leaves are more effective in Winter than at other seasons for they are colored scarlet shading to dark red. The leaves appear even darker than they are, because of the contrast with the light yellow stalks. They are born on straw-colored branches with thorns of golden yellow, and altogether make a gay color combination.

The glossy leaves of the dwarf *Berberis Chenaultii* are arranged in star-like clusters and subtended by two or three thorns, and are now painted maroon on the upper surface. On

the under surface, they are tinged with violet and dull surfaced. *Berberis Sargentiae* carries lush green leaves shaded slightly with red or yellow stems having pale yellow thorns.

The leaves of *Myrica caroliniensis* are dark red against the grey of the berries, and those of *Mahonia aquifolium* are brown-maroon, but in my garden they are always affected by frost and when Spring comes present a much weather-worn appearance. The dwarf *Mahonia nervosa* seems to withstand the buffeting experience of alternate thawing and freezing better.

The leaves of *Galax aphylla* stand in colonies on stems six inches high, and are glossy and of a reddish bronze just now. *Leiophyllum buxifolium*, a native of our Southern and Central States of the East, has crimson stems and the leaves colored maroon; while last year's flowers, which should have been removed, but are still adhering, are now a soft yellow. The flowers are whitish pink when in bloom.

The evergreen azalea hybrids are stunning in Winter. Their branches grow low and spread parallel to the ground in a full wide expression. The glossy leaves on some are a true bronze blended with reddish, while on others they have a deep ochre tone. When the branches are laden with snow the clustered leaves stand out in star-like shapes.

The catkins on *Alnus vulgaris* (black alder) hang in fours, and their scales are marked as with frosting. The branches lean far over the ice when we skate along the pond, and are maroon. Now the catkins are stiff and waiting for Spring to lengthen them, and make them pliable, and unloose their golden pollen to be dispersed with the wind. Last year's feminine flowers are brown, stiff and empty.



Walter B. Wilder

Laurel and Rhododendron

In addition to the bronze, scarlet and maroon, there is a good deal of green color. The leaves of *Daphne cneorum* are still green, but touched a bit with yellow, especially at the tips. *Daphne laureola* is a fine shrub for Winter effect for its leaves are quite green but hang down, perhaps due to the cold. In addition to these two foreigners, there are many native American Evergreen plants. *Kalmia latifolia* (Mountain laurel) has glossy leaves, pliant and green all Winter, and those of *Kalmia angustifolia* (Sheep laurel) are pale green on the upper surfaces while the under surfaces are tinted faintly with maroon. *Kalmia polifolia*, a dainty shrub with tiny leaves, stays green too. I wish someone would try to breed these Kalmias, for they seem to have possibilities for being developed into more widely varied forms.

The rhododendrons have the curious habit of curling in the margins of their leaves when it becomes very cold. The colder it gets the tighter they roll their leaves, a protective device. *Leucothoe acuminata* is new in our garden, and the leaves have remained bright green into January. The new leaves at the tips of the branches are glossy and a light yellow-green.

Pieris japonica has lush-looking green leaves shaded with bronze, on magenta stalks, and pendant magenta flower stalks with green buds ready to open white in early Spring. *Pieris floribunda* is not as pretty but the leaves are also green. The leaves of *Lonicera fragrantissima* stay on into January and when it snows their yellow green looks attractive against the whiteness. *Lonicera Perilymenum* trained on the trellis and with deliciously fragrant blossoms all Summer, has its leaves darkened with

bronze and they remain almost until Spring.

In the herb garden the savory keeps its leaves green and so do the hyssops although both die back considerably within the next two months. The new leaves at the tips of the *Satureia montana* (Winter savory) are touched with brown and those on *Satureia alpina* with yellow. *Thymus serpyllum* var. *splendens* which has magenta flowers, turns dark maroon, while the creeping thyme with white flowers turns yellow and *Thymus serpyllum* var. *lanuginosus*, which has grey foliage in Summer, is now a marvelous shade of plum, and Golden Thyme is very yellow. It is as if the frost brought out the hidden colors in the leaves. The grey leaves of lavender are shaded with violet, and the leaves of *Teucrium chamaedrys* are shining green with here and there a brightening of red. The leaves of Dianthus species are a silvery grey, always lovely, but especially so in a snowfall. Grey against white is such a delicate contrast in tones.

There are several handsome evergreen ground covers and nothing makes the gardens appear greener in Winter than stretches of *Vinca minor*, pachysandra, or *Arctostaphylos Uva-ursi*, (Bearberry). The only objection to ground covers is that where they grow it is not possible to spade the ground, and this to me is one essential for good gardening. Another ground cover, green all Winter, is *Mitchella repens* (Partridge berry), with tiny leaves and twin white flowers turning to brilliant scarlet berries. It requires a shaded location. English ivy is the classical ground cover used in old French gardens, and where it is hardy, is hard to beat. In Winter the leaves turn bronze.

Standing above the mulch of manure



Walter B. Wilder

Hybrid Azaleas

and decayed leaves are many green remnants of last Summer or perhaps, to use a more optimistic expression, portents of future flowers. There are the leaves of the *candidum* lilies, now having a purplish tone spread over them, green leaves of *Campanula carpatica* and *Campanula persicifolia*, of *Draba alpina*, Sweet Williams, of *Dianthus deltoides*. The clumps of the muscari leaves have flopped over onto the ground, but those of the *Iberis sempervirens*, the perennial candytuft, are green and lush.

The buds on the maples, the lindens, the birches and on countless shrubs are either tinted magenta or altogether magenta. The buds on the lilacs are yellow green and have the most alarming way of appearing ready to burst open any moment. This happens now and then and makes one tremble for fear the flower buds will be frozen. *Azalea nudiflora* loses its leaves, but the flower buds are a satiny pale ochre yellow and the stems a dark grey. A lovely combination that of yellow and grey, which is repeated in the beeches in Spring, only that their buds are a deeper ochre than those of the azaleas and the bark of the Lady of the Woods is almost silky, it is so smooth.

Cercis canadensis, with its pinkish lavender irradiation of bloom, is the glory of the garden in May, and somehow there is a reddish magenta cast over it in Winter, as if the blossoms had left a visible remnant of their beauty, like a song echoing behind them, especially when seen through the windows of the house. When I go close to the shrub to see where the color comes from, I find that the twigs are grey and there is no red in the fruits, so perhaps the color is a mirage.

Besides the color in the leaves, buds and berries, there is brilliant coloring

in the stems and branches of some plants. Many of the rose species have scarlet or orange canes. This year's canes of the blackberries, close relatives of the roses, are a startling electric blue. The best advertised of Winter stem coloring, that of the *Cornus stolonifera*, the Red Osier Dogwood, has truly red branches. The branches of *Cornus sanguinea* (Bloodtwig) and of *Cornus Amomum*, less frequently mentioned, are maroon, while those of *Cornus stolonifera* var. *flaviramea* are mustard yellow on this year's growth and dull yellow on last year's.

The coniferous evergreens come last, for they are the usual plants expected to furnish color in Winter. Conventional members of the garden scene and conventional happenings are never on the front page of the news. Most men like evergreens, perhaps because they seem more masculine, virile and lusty, than deciduous trees. I like them too but not nearly as much as the masculine members of our partnership. Too many tall and spreading evergreens in a small space take the place of plants I prefer to have. Moreover, where pines, hemlocks and spruce grow, almost nothing else will, for they make the soil sour and shade it deeply all the year around. They elbow out the flowering dogwoods, the cercis, the apples, cherries, and spiraeas, if allowed to spread according to their natures. A hedge of hemlock neatly trimmed and kept thin, will outline the garden in a healthy green all year and is a fine substitute for Box in parts of the country where that is not hardy. Hemlock and pine, too, make fine hedges when sheared, and their top roots do not interfere with the growth of their close neighbors. Cedars make accents in our gardens as fine as the cypress in those



Walter B. Wilder

Garden Roses

of Italy, and in early Spring they clothe the garden when the late bloomers still show naked limbs over the ground covered with narcissi, early tulips, crocuses and hyacinths.

Some junipers lie quite close to the ground and are satisfactory in certain situations, such as on banks or amongst rocks. Their variety seems almost infinite. *Juniperus depressa plumosa* turns a rusty color, henna-tinged in Winter. *Juniperus chinensis Sargentii* is even more rusty and with a dull green showing too, while *Juniperus Douglasii* is tinted with magenta.

Taxus canadensis too makes a fine cover for banks. It is flatter and has thinner tips to its branches than the Japanese yews.

The retinosporas are particularly susceptible to being sheared into balls, pyramids or cones. Some of them are tipped silvery and are almost

ethereal in the snow, or when the frost glistens on the fluffy tips of their branches. The green species look cheerful, make good accents, and maintain the outlines of the garden during the Winter. *Chamaecyperus plumosa* is quite golden in Winter and makes a shrub twenty feet high with plummy tips to its branches.

My notes have been taken, the sun is beginning to go down, and it has grown very cold. It is time to go in and light the fire for my guests. As I open the door of the house I think, after all, what fun it is to live in the country and be able to watch one's plants all the year around, and see how their colors change, and their shapes.

If we only knew our gardens in Spring and Summer, it is like meeting people at parties. Seeing them in Winter is really being intimate with them and knowing every phase of their life cycles.

A Few of the Californian Lupines

LESTER ROWNTREE

LAST May when I was driving hither and yon over the state, I decided that this present screed should be about lupine. *Lupinus nanus* decided me. There is never a year when *Lupinus nanus* and its varieties fail to do something heavenly to the Californian landscape, especially to that part of it lying not far from the coast between Santa Barbara and a point 100 miles or so north of San Francisco. But this year more people than usual were going about saying "Isn't it a grand lupine year?" their voices growing louder and louder as each strove to explain to the rest where the most superlative stands were growing.

When I went south from Carmel early in February, *L. nanus* was already making a very few very light blue patches on the landscape of the Monterey Peninsula. When I came home for a few days at the end of April, it was spreading itself like pieces of fallen sky over green hillsides and on coastal sands where small daisy-like *Baeria* sheeted the ground with gold. In May, when I turned north, I found Marin and Sonoma Counties still flecked generously with large splotches of blue, deeper now and more purplish, but unmistakably *L. nanus*. Across all the 5,000 miles which I traveled during those months, *L. nanus* stood out more than any other flower species—even more than *Eschscholtzia californica*, California's much vaunted poppy. And in late June, when I landed in Carmel Highlands again, there was *L. nanus*, still touching up the now yellowing grass with spots of blue.

The two flowers, *Lupinus nanus* and *Eschscholtzia californica*, often grown together, sometimes mingled but more frequently splashing the countryside with parallel drifts of color. As landscape features there is much to be said for both of them, but *L. nanus* needs a champion, while the poppy has a well-established following. *L. nanus* does for California what the very similar Blue Bonnet (*Lupinus texensis*) does for Texas, but our Lupin has not yet evolved its own personal common name. So when you ask "Which lupine?" people wave their hands and say, "Oh, you know. The little blue one you see everywhere."

L. nanus is an annual with light green stems and leaves of a grayer and darker green. When affairs are to its liking it can be a plant twelve inches tall and more than that across, but it is usually smaller, especially when growing in close masses. The flower spike is three to six inches tall and the usual color is a pure bright blue, though in Sonoma and northern Mendocino Counties it is more purple, while some varieties run to powder blue. There is more white in the buds than in the opened flowers, which is why the stands are light sky blue in the early stages. The broad stripe down the center of the banner is at first white, dotted with very dark blue; when the flower matures this white stripe turns to a deep shade of lilac. At this later stage the entire stand gives a darker blue, purplish-tinged effect and develops an overpoweringly strong fragrance—if you can call it a fragrance.

This habit which lupines have of darkening or even changing the color of their banners accounts for the many different shades the same stand can assume. You can see a stretch of lupine in the changing lights of a single day, alter to gray blue, powder blue, bright light blue or cobalt blue. But at different stages of its life-cycle it may be, first blue, then lavender-blue, then purple.

L. nanus is a good mixer with all sorts of other flowers, which at a distance affect the general color of the stands. When it riots about with *Rumex acetosella*—the Sheep Sorrel hated by farmers—in red bloom, the combination makes a quite stunning red-purple sheet which, unless you have met something of the sort before, will set you guessing its make-up. With Cream Cups (*Platystemon*) and white Owl's Clover (*Orthocarpus*) the effect is very light blue; with magenta *Calandrinia* and the purple Owl's Clover it is again red purple, and so on.

L. nanus is lovely with yellows—with sulphur-yellow wild mustard waving above it and round its edges—with Tidytops (*Layia platyglossa*) among its blue spiking, or with the deep gold madias which take possession of the land just as the lupine begins to go off. And one of the color combinations which I have especially extolled this year is that of *L. nanus* in full bloom between and in front of blossom-laden shrubs of lemon-yellow bush lupine. Also in one rural town lavender and purple *Linaria maroccana* had escaped from a garden and invaded an adjoining empty lot which was blue with *L. nanus*. Any bit of space not filled with Lupin was occupied by *Linaria* and I could not pass by without stop-

ping to enjoy the color harmony of purples, lavenders and blues.

This was a banner year too for *Lupinus succulentus*, the rain came just when the lupine was ready for it. *Succulentus* will grow in almost any spot where its craving for moisture can be satisfied. It sways about in damp depressions, fills roadside ditches and covers banks where water is seeping through in spring. It runs a good deal to foliage, deep rich green foliage, very lush and rather coarse; but it is very dependable (so long as it can get water) and quite universal. Lupine enthusiasts allude to it calmly as "Good old *succulentus*," but would greatly regret its absence.

It blooms as early as *L. nanus* but is a larger, taller plant. The flowers are a deep rich blue purple which looks quite blue in some lights and a true purple in others. In years when they really get their fill of water the very light yellow banner center (which, lupinelike, turns purple as the flower ages) is more pronounced, sometimes pure white instead of yellow, and conspicuous enough to lighten the color of large stands.

Anyone who makes a habit of going into the southern Sierra foothills in spring, looks forward to seeing the white variety of *Lupinus densiflorus* in bloom, the eight-inch flower spikes leaning out and up in a characteristic manner of their own from the smooth sides of little cañons, or covering slopes in the cattle country, where lichenized outcroppings of rock and scattered groups of oaks and buckeyes make pleasant rural scenes. Often there are splashes of blue *Nemophila insignis* and white Popcorn Flower (a *Plagiobothrys* species) with perhaps a little coppice of Blue Oak (*Q. douglasii*) near by, while behind in



Lester Rowntree

Lupinus densiflorus

the distance are the snow-capped Sierras,—though you can't always see them for the foothills. The fields are still green when this *L. densiflorus* var. *lacteus* comes out, the orioles are building their nests, the warblers have come back to the mountains, and from the tree-tops ash-throated fly-catchers scold one another in harsh voices. The rains are not yet over and the nights are still cold. But there is something abroad in the lower mountains in the early Californian spring which reminds one who has loved eastern springs of the thrill which goes through that countryside when the first flowers begin to bloom.

In the Tehachapi Mountains there is a rich deep blue-purple variety of *L. densiflorus* (v. *palustris*) which grows on half-shaded slopes with blue delphinium and creeping violet-blue *Nemophila aurita*. Marin and Sonoma Counties are headquarters for the

type, which is light pink or deeper pink, soft shell pink or lavender pink, as well as for the variety *Menziesii* which is a soft primrose yellow, and for a white form not identical with v. *lacteus*. In April and May they all cover the bare steep banks of newly-made roads, edge the roadsides, spill across the fences into the farmer's fields, and are sociable enough to establish themselves in huge stands beside many of the highways, where all who pass may see them.

The most striking variety of *L. densiflorus* is v. *crinitus*. It confines itself, as far as I know, to one section of Sonoma County, where in April and May it makes merry with pale pink, yellow and white Owl's Clover (*Orthocarpus*), with succulent-looking enormous-flowered yellow clovers and flat-growing, yellow-flowered lotus, and shows a strong liking for ditches and banks which are very wet in spring

and which dry out in summer. It bounces happily along through late winter and early spring, but as soon as the dry hot days set in to burn away the fog which is characteristic of that coastal region, it makes haste to finish its cycle and spill its seeds.

The plants, like all *L. densiflorus* plants, are quite symmetrical when they have room to be, sending up a fairly erect central stem ringed evenly round with side branches and all of them tipped with flower spikes, the blossoms on the central spike larger and earlier blooming than those at the sides. The gray-green leaves are very hairy and so are the thick stems. The flowers are set along the stems in large, regularly spaced whorls and below each whorl is a ring of pointed bright green, silver-haired bracts, which show conspicuously before the buds unfold and give a rather over-balanced look to the spike. When the fog settles down the heavy spikes bend low with their load, the hairs of leaves and stems holding crystal-like moisture; a fog-drenched bank of *crinitus* is very lovely.

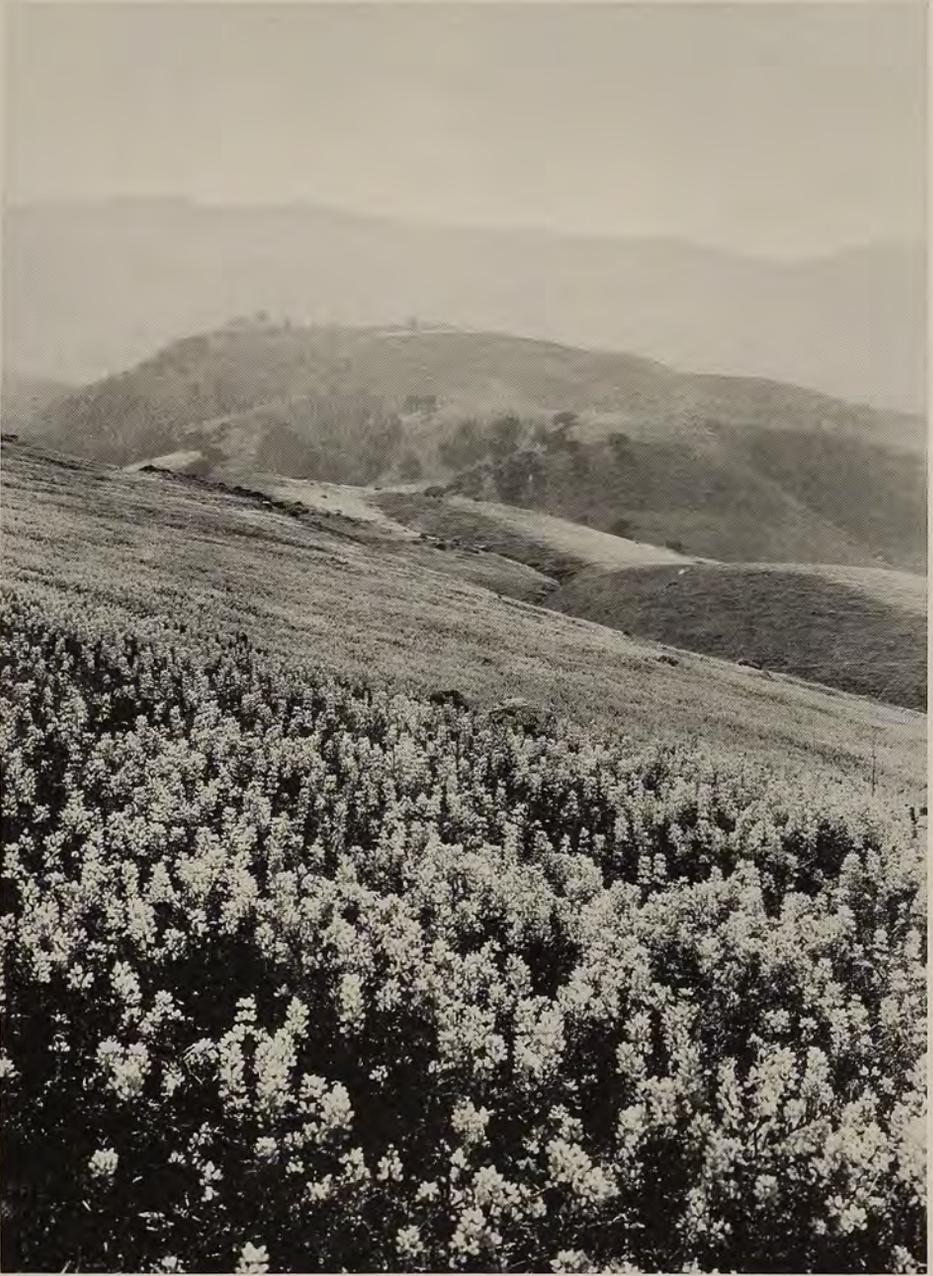
The color varies in depth but is generally a shade of lilac, parti-colored with white, though some plants have flowers of rich red purple or dark lilac with no white whatever. Or the banner may be a pale lilac and the wings a deeper shade.

All along the coast and from one end of California to the other appear little *Lupinus bicolor* and its varieties. It makes its largest display in southern California, where it is a gray-leaved annual of barely four inches; further north, where it gets more rain, it is larger, greener and more lush. Considered as an individual, *L. bicolor* is not arresting; its effects are made when it grows in large quantities. It skirts round the edge of deserts,

spreads across coastal swards, makes blotches on the lower flanks of coastal mountain ranges and masses itself in April in the Tehachapi Mountains, where it covers acres and acres of high steep slopes and rounded hillsides with soft dull blue. For although the flowers themselves are a good rich bright color without much white marking, they are small in proportion to the amount of gray-green foliage, which dilutes their azure, in mass and at a distance, to a lovely green-blue shade.

On the slopes above *L. bicolor*, or sometimes close beside it, the best of all California's annual lupines makes patches of indescribable blue. After you learn to know *Lupinus Benthamii* you can identify it by its color as far away as you can see it, because its pure blue, especially at a distance, has a peculiar and exquisite tinge of its own. It is beautiful when it makes batiks with golden amsinckias and lighter, brighter yellow composites (sometimes as high as 4,000 feet) it fills the spaces between huge gray boulders, looking like blue pools. In the hand it looks like a greatly glorified *L. nanus*,—taller, more flowery, and with intenser color. This is the large lupine which tourists rave about when they come back from one of those trips known as "going to the desert to see the flowers,"—trips which generally take them, not to either of the Californian deserts, but to the region near and particularly to the east of Bakersfield.

I love *Lupinus varicolor* most when I am away from home, because, like the blue bush lupine, *L. albifrons*, it is native to my coastal hillside and keeps intruding on my garden. *L. varicolor* is at its best on Point Reyes, that very pleasant and very flowery hammer-shaped peninsula north of San



Fraser

Lupinus Benthamii

Francisco, which shoots out to the southwest from the middle of Marin County's coastline. It is a low-growing perennial, quite prostrate in exposed places, making flat round mats over eighteen inches wide and fringed with ascending stems which end in four-inch flower spikes. Its name is appropriate, though probably meant to convey the idea of a many-hued panicle. This is perfectly correct, for the usual form is tipped with cream-white buds, the just-opened flowers below them have pale yellow banners and pale lavender wings, while the flowers in the lower whorls, beginning to age, have dark red-purple banners and deep lavender-blue wings. But different plants may also differ greatly in color,—this is particularly true on Point Reyes and along the coasts of the counties north of San Francisco. Some have all-white flowers, others are pale blue, others lemon-yellow, still others have bright yellow banners and cream wings; some bear flowers which are pure white in bud and uniformly red-purple when open except for a white stripe down the banner and the flower spikes on these plants have a bi-colored purple and white effect. A coastal slope of these lupines among rose-pink *Sidalcea malvaeflora* and pale pink thrift (*Armeria vulgaris*), yellow leysias and baerias, with rich deep blue-purple *Iris Douglasiana* standing up between the lupine's straggling branches, is a pleasant sight.

Up in Humboldt County, where they get several feet of rain in winter with some summer showers thrown in for good measure, a perennial lupine with long lavender and light purple and white flower spikes bands itself into mounds and hedges and covers banks with lush growth. It stands high along the roadsides,—along the sides

of little country roads where wild plants can come down close to the narrow way — and it makes alleys here pleasant to pass through. Or it may invade spots where the yellow bush lupine is growing and push up lavender spikes among the deep cream and soft or bright yellow ones. Cattle wander about in fields of it, carefully avoiding it, leaving it for wayfarers to admire and farmers to curse. It makes colonies in front of groupings of blue-flowered *Ceanothus thyrsiflorus* which look like fat blue clouds, or beside pink wild roses pierced by English foxgloves which, like the Ox-eye daisies among the lupine, have naturalized themselves in this moister part of the state.

This *Lupinus rivularis* is a loose-growing plant and unless it gets all the moisture it wants it may be a rather nondescript thing, though it sometimes goes quaint and piling closely into itself makes a neat, plump and formal sugarloaf. I never thought much of it until I saw it burgeoning forth one spring after several feet of winter rain. Its vigorous beauty spread over the countryside in complete abandon. Gas station men, not always alive to this kind of loveliness, referred admiringly to "them tall blue flowers." Farmers' wives decorated their homes with them and children lugged them by the armfuls to teacher.

You find *L. rivularis* growing at the foot of a bank of deep buff-yellow *Mimulus aurantiacus*, or with brighter yellow *Mimulus guttatus*, while down below it are very probably some purple-blue *Viola adunca* and a rift of English daisies (once escapes but now quite established in the country). Or you find it coping sturdily with wild blackberries or flourishing on equal terms with a clump of *Calla lilies* which has leaped the garden fence and

*Lewis Josselyn**Lupinus arboreus*

settled down cosily to live in a ditch. It borders moist meadows and edges streams and takes over for itself river beds which are wet in winter and barely moist in summer. It does good service too in tethering loose roadside banks which floods might wash away. It may be a five-foot plant, three or four feet across, with a foot and a half of bloom on its yellow-green flowering stems. The general effect is of lavender and red-purple tones, sometimes shell pink and occasionally pure white, but when you look at it closely you find almost-white buds, newly opened flowers with white or pink banners and purple wings, and aged flowers whose banners are red purple.

Lupinus arboreus is a willing worker as well as a lovely decoration, and people who live beside the sea are beginning to realize it. It was the San Franciscans who first put yellow-

flowered *L. arboreus* to work. Finding that their sand dunes,—sand dune fashion—had taken to moving about, they made experimental sowings of the lupine seed to anchor down the shifting masses and found that it worked. More recently, up north on the Samoa Peninsula,—that thin little Humboldt County strip of coastal land or sand which curves south toward Eureka, a Coast Guard's wife decided that something should be done to stabilize the sands on which she was living. So she inveigled the county or the Government or somebody into securing yellow bush lupine seed from Mendocino County. Then she rounded up a group of women. Together they descended on one mile of sand dunes and sowed the seed. Next year the resultant bushes blossomed and produced more seed. The Coast Guard's wife rounded up her group of women

again to collect that seed and with it sow another mile of sand dunes. I believe that she and they and the lupines are still keeping up the work.

Everyone likes the yellow bush lupine. It is a neat bush until it becomes spent,—which on my hillside generally happens at the end of its third year,—and its flowers, usually a soft lemon yellow, are sometimes much brighter and sometimes deep cream. It is a weed in my garden and I like it best on other people's property, especially on a wind-blown dune or seaside bluff where it has been pressed low and wide and shelters in its flat outflung arms such plants as pink or yellow sand verbena, creamy coastal wall-flower (*Erysimum capitatum*) and the wandering, large-flowered pink beach convolvulus (*C. soldanella*).

After a rainy winter some bushes will reach over six feet in height, will be twelve feet across, and will cover themselves with hundreds and hundreds of yellow flower spikes, often over a foot long, all leaning out and up at the same angle. A bush may stand out alone, bold and beautiful, or several may huddle together in a dense clump, abandoning individuality or form for the protection of a communal life. Mingled with the yellow bushes you will occasionally find some bearing lavender pink, or parti-colored lavender and white flowers. Always there is fragrance, a scent so strong that it drifts through the car window as you drive past.

Lupinus polyphyllus is, I suppose, the species which has achieved the greatest horticultural importance, because it is one of the parents of those spectacular lupines which American tourists covet in the gardens of the English and try so hard to grow in America. Beginning in central Cali-

fornia, *L. polyphyllus* flourishes all the way up to British Columbia. It likes heavy soil which stays wet well into the spring, but will grow in drier soil as well. It is one of the most conspicuous lupines because of its color and because so much of the flowering stem is covered with bloom,—often two feet of a four and a half foot stem. These stems are straight, thick and hollow, the rich green leaves are large and hairy and the flower is a dark rose red or red crimson, often a red purple or a pure purple. In Oregon the flowers are often lighter in color in their early stages, but as they age they always turn a dark red brown. A large colony of this rather stiff, uncompromising-looking lupine is quite a surprising sight, especially if you have recently been associating with the dwarf or floppy species. It is particularly striking when it grows with *Heracleum lanatum*; both are large and imposing and the tall cow parsnip with its wide umbels of white bloom and large dark green compound leaves, towering above the lupine, gives just the right touch to soften the latter's formality.

The Californian lupine species number about seventy. Among them are those which want wetness and those which want dryness, some which are happy in lime soil and many which prefer a rich acid humus, some which like heavy soil and some which like light soil, species which enjoy cold, snowy winters and species which want no winter whatever. All of which goes to prove that we can never rise to announce with authority that *all* lupines need a certain kind of soil, and should do something to cool the blood of those lupine growers who argue so heatedly about the merits of lime versus acid.

Trilliums

ANNIE LEE R. CLEMENT

"FOOLS rush in where angels fear to tread" is no doubt true in this case, since botanists, scientists and many amateurs realize how badly the trillium family is mixed and how much it needs further study, but I am only giving a few of my observations and not posing as an authority.

I have grown twelve species of our southern trilliums at Nik-Nar for a number of years and collected all of them except *T. sessile* which was sent me from Virginia. I have recently added two more species to my garden, *TT. pusillum* and *Underwoodii*, but since I have not checked them in my garden I will omit them, even though I have seen them elsewhere.

Trilliums are easily grown and make very satisfactory plants for woodland gardens. They should be used more frequently. Their requirements seem to be shade and leafmold. I grow them in an acid soil, under a variety of deciduous trees, which is very dry at times. The deeper the humus the better trilliums one will have. They like moist but well drained soil, but not wet. I find *Trillium luteum* in alkaline soil but it grows equally well in acid conditions. If trilliums are to be used in beds it's well to plant some ground cover with them such as ferns, *Sedum ternatum*, hepaticas, etc., as the trillium foliage dies down before summer is over and this practice prevents bare spots.

Our first blooms appear in March or early April. *Trillium Hugerii* opens the season with stout stems carrying handsome marbled foliage of a purplish color blended with two shades of green. The flowers are sessile and of

a dark maroon color, smelling profusely of crushed fruits. They grow six to eighteen inches high.

Following closely will be *T. simile* with its large white petals surrounding a dark ovary, which varies in color from brown to black. The anthers are large and cream colored but the dark ovary is the point of interest. The flowers are held well above the large rhombic foliage. No odor is found in these showy flowers.

Before these are gone the majority of species are in flower. *T. erectum* has stately stems and long pedicels carrying maroon flowers with dark ovaries and cream stamens. There are many discolors among this species varying from greenish purple to pure white. This trillium seems to "cluster" more than any of the others, sometimes six or eight flowers coming from one rhizome.

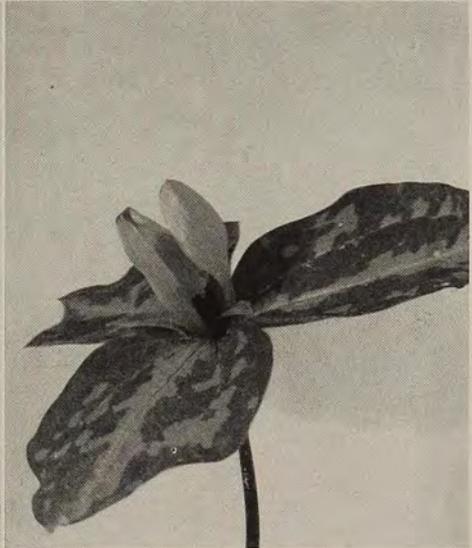
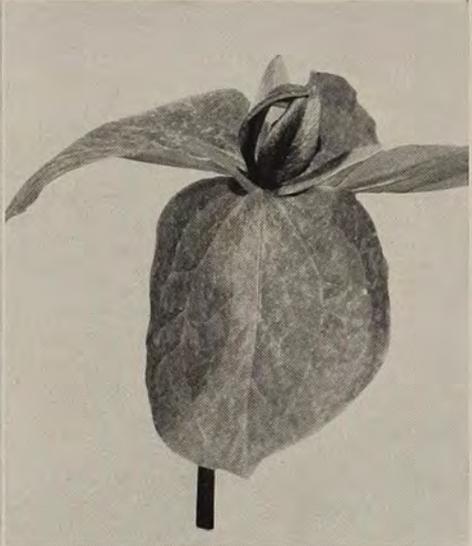
Trillium luteum has been classed as a discolor of *T. Hugerii*, but I feel that Prof. Harbison was right and it is another species. There is a marked difference, even to a layman, when they are seen together. *T. luteum* is at least two weeks earlier; the odor is different, *T. luteum* having a decided lemon fragrance; the marbling of the foliage is in two tones of green; the arrangement of the pollen is unlike and many more minor differences. Then, too, I have never seen a discolor in *luteum* but there are discolors in *Hugerii*, even to golden yellows. One disappointing feature of *T. luteum* is that when grown in the north it is a sickly green. Here in the south it is a clear lemon yellow.

The snow trillium, *T. grandiflorum*,



George Massa

Trillium erectum



Trillium Hugerii

Trillium luteum

Trillium sessile

Trillium discolor

(All photographs by E. L. Fisher)



George Massa

Trillium cernuum



George Massa

Trillium undulatum



Trillium Catesbei (E. L. Fisher)
Trillium simile (E. L. Fisher)
Trillium undulatum (George Massa)
 A specimen with four part plan.



E. L. Fisher

Trillium Vaseyi

has the widest range of any of the species, extending from Quebec to Florida. The large blossoms of pure white are very beautiful surrounding a cluster of cream stamens. It never opens out flat but stays tubular in shape. When it ages it fades to pink or even rose. Some claim a pink form, but all darken with age.

While *T. sessile* has chocolate-colored flowers, and as the name implies has sessile flowers, they are quite different from *T. Hugerii*. The flowers are much smaller with broad rounded petals. The foliage is almost a plain green and the odor is not pleasing. An interesting species but perhaps the least appealing.

T. cernuum, the nodding trillium, is white with recurved petals and dark anthers. The flowers hang just beneath the leaves and are not so easily seen as others.

The Painted Lady, *T. undulatum*, is the most difficult to grow in my garden. They come from our high mountains and I feel that they require more moisture than I am able to give them. Perhaps this is the most beautiful trillium and surely the most easily identified. No other has the red lines at the base of the petals and it is the only one that has petioled leaves. The fruits are a bright red.

T. album is found on our high mountains also and it is best described as a white form of *erectum*.

The latest trilliums to bloom are *discolor*, *Catesbaei* and *Vaseyi*. *T. dis-*

color is very dwarf but effective with its marbled green foliage. The cream-colored petals are rounded at the apex and when fully opened stand apart, showing the dark stamens near the ovary. This trillium is very rare but seeds freely and is easily propagated.

The "Pink Trillium of the Carolina Mountains," *T. Catesbaei (stylosum)*, is a dainty little plant. It is of the nodding type, has bright pink flowers and crisped recurved petals and cream anthers. It fades a deep rose color. The foliage is usually bronze and at times appears red.

The largest of our trilliums is *T. Vaseyi*. The slightly recurved maroon petals are a good background for the tan-colored anthers. I have found this trillium in deep moist woods more than two feet high and with blossoms more than four inches across. The most interesting one I ever saw was no doubt a hybrid. It was checkered, maroon and white, like a piece of gingham.

There are many freaks among trilliums as well as other flowers. One is fortunate to find a double form as well as ones with four, six or other unusual number of petals. To me trilliums, even as nature intended them, are among the most fascinating of our native plants. They are dependable, can be transplanted at any time; will not only live but usually bloom the following year, even though the flowers have been removed.

Asheville, N. C.

Spanish Moss

FRANCES HANNAY

THE most characteristic native plant of the tropical Gulf Coast region is the Spanish Moss. This curious but picturesque silvery-grey plant is known locally by several names—Southern Moss, Long Moss, and Florida Moss. The botanical name, *Tillandsia usneoides*, was given to the plant by Linnaeus in honor of Elias Tillands, a professor of medicine at the University of Sweden, and for the plant's resemblance to the lichen *Usnea*. Spanish Moss is a member of the Bromeliaceae and is related to the pineapple and billbergia.

Contrary to the general impression, Spanish Moss is classified as an air plant (epiphyte), and is not destructive to trees unless it exists in unusually large quantities and becomes too dense. The fallacy that this plant is a harmful parasite has been largely responsible for its exclusion in some communities.

Spanish Moss is greatly beloved throughout the deep South where it adds interest to the tropical landscape by draping itself from the branches of the live oaks, mesquites and elms. Occasionally one finds it festooned from telephone wires, but it is more plentiful in river bottoms, ravines and valleys than in open locations.

Close inspection of the plant reveals the branching of the silvery, string-like stems in a twining formation somewhat resembling the coils of a spring. During the spring and early summer, countless tiny, pale green blossoms appear at the short stem ends. These infinitesimal and inconspicuous flowers have three reflexed petals, measuring less than a fourth

of an inch across, and give out a most delightful and unusual fragrance. During the blooming season, a handful of the moss, when brought into the house, will perfume an entire room for one or two days. Spanish Moss is used very generally for holiday decoration, particularly in combination with the various native greens.

By some people, Spanish Moss is considered extremely gloomy and somber. But the majority love it for its picturesqueness and to them the graceful festoons, hanging from huge live oaks, suggest the beauty and dignity of a massive cathedral.

Spanish Moss has a number of commercial uses which make it a definite source of revenue. It makes an ideal packing material and is used extensively for upholstery purposes and mattresses. Special preparation is necessary for this latter use; the moss is gathered in great quantities and buried for a certain length of time. When unearthed, the soft grey covering has rotted away, leaving the black, hairy, skeleton threads which are used for the stuffing.

In some parts of the deep South, moss is used to cover newly planted trees to prevent their drying out. A layer of moss about an inch thick is tied around the trunk and branches with twine and occasionally, when the season is advanced, the roots are covered also. Moss is commonly used by farmers to line hen's nests, as bedding for domestic animals, or as fodder for cattle during certain seasons. In pioneer days, moss, mixed with mud, was used for chinking log houses, and the Indians made a soft warm cloth of it which they used for clothing and blankets.



Spanish Moss

[See page 271]

Rhododendron Notes

Growth Substances and the Propagation of Rhododendrons and Azaleas by Cuttings

THE use of growth substances has already become a general practice in the propagation of certain groups of plants by cuttings. Whether their use is warranted with plants which root easily is questionable. It is certain that they are not so effective as it was hoped that they would be upon plants which, untreated, seem generally incapable of producing roots. But rhododendrons and azaleas are not quite in this class. Cuttings of many hardy types are at least capable of producing roots when carefully handled. With ordinary cuttings, however, the resulting root system is usually so weak that this mode of propagation is not profitable, except in the case of a few recognized species and varieties such as *Rhododendron obtusum*, *R. racemosum*, *R. viscosum*, etc., to which the remarks in this column do not refer. Recognition of the above facts places rhododendrons and azaleas in the position of likely subjects for treatment with growth substances and has led the writer to test them out fairly extensively. During the past three years some 65 species and varieties have been treated with indolebutyric acid and other root-inducing chemicals. A report of these experiments has been made elsewhere* but the mention of a few observations and conclusions may be of interest here.

Indolebutyric acid, the active agent of Auxilin, Hormodin and similar

preparations, has generally been found as effective as any of the various compounds in use; naphthaleneacetic acid runs it a close second. In the tests mentioned water solutions of these acids have generally been used. Certain of the more recent dust preparations have given very fair results although, with these plants, they do not seem as effective as the solution treatment. The reason probably lies in the fact that hardy rhododendrons and azaleas respond best to a fairly concentrated solution—8 to as high as 12 milligrams per 100 cubic centimeters of water. This is undoubtedly a stronger treatment than can be given by the dust preparations which have at present appeared. It is interesting that these plants show little or no stem injury when treated with acids at concentrations which would be far too strong for cuttings of most ordinary ornamental shrubs.

Cuttings are usually soaked for about 16 hours in the acid solutions. Within a range of 8 to 24 hours the difference of a few hours' soaking either way does not seem of much importance in rooting.

Typical half-ripe wood cuttings seem to be the most satisfactory. These are taken during late June and early July. The cuttings are handled in outdoor frames or in closed cases in the propagating greenhouse. The latter method is perhaps to be preferred, for in cases it is a simpler matter to secure a careful control of temperature and moisture. The peat and quartz sand rooting medium must never be allowed to become too wet, for azalea cuttings are easily suffocated. A bottom temperature of 70 to 73 degrees F. seems to be about right. It can be readily

*Rooting responses of azaleas and other ericaceous plants to auxin treatments. Proc. Amer. Society for Hort. Science, pp. 830-838, 1937. (By H. T. S.)

maintained by the use of electric cables and a thermostat.

Under these conditions a wide variety of azaleas and rhododendrons will give very satisfactory rooting in a matter of six weeks to three months. Slowness seems rather characteristic of this group of plants but apparently cannot be avoided, for it is a strange fact that, while acid treatment gives a better root system in most plants, it only markedly speeds rooting in those varieties which, without treatment, are the quickest. The chief value of the growth substances seems to lie in the production of a greater number of roots and functionally stronger root systems. The great disadvantage of the untreated cutting is its tendency to produce a root system from but one or two roots which readily become detached on handling.

Such varieties of the Ghent and Mollis azaleas as Bouquet de Flore, Domenico Scassi, Frere Orban, General Brailmont, Gloria Mundi, Grandeur Triomphant, Mignon and Unique have been found to produce roots readily. In spite of growth substances, however, there are still a number of extremely recalcitrant forms, such as *R. roseum*, which seldom give more than a low percentage rooting. The varieties Altaclarensis (of Veitch) and Compté de Gomer have not yet been rooted at all.

Amongst the rhododendrons, *R. ponticum* and *R. decorum* are examples of species which respond readily to acid treatment. *R. catawbiense* gives fair response; *R. maximum* is very poor. It is interesting that leaf-

bud cuttings of several *R. catawbiense* varieties root extremely well. This propagation method is worthy of future attention, for if the leaf cuttings can be made to produce satisfactory plants it would seem to have very definite possibilities.

At the present stage in the propagation of rhododendrons and azaleas by cuttings the most serious problem appears to lie, not so much in the rooting of the cuttings, as in securing a satisfactory development of the cutting after potting; for it has been found that, even though the cutting may continue to develop roots after potting, unless some top growth is secured before winter the losses of such plants during the dormant season are apt to be very high. Closer attention given to earliness of propagation, quick potting, fertilizing and very possibly the use of a slightly increased daylength may perhaps be likely approaches to a solution of this particular difficulty.

The advantages of producing own-root plants by a rapid method such as cuttings are too evident to need discussion here. It is at least encouraging to feel that, with the advent of growth substances, the economic production of own-root azaleas and rhododendrons, of the types which are hardy in our northern regions, shows evidence of becoming a possibility. More testing and experimental work will still be required, however, before it can be definitely proven that this spirit of optimism is indeed well founded.

HENRY T. SKINNER.

Cornell University.

A Book or Two

Plants for the Connoisseur. By Thomas Hay. Putnam & Company Limited, London, 1938. 180 pages, numerous illustrations and colored frontispiece. 10s. 6d.

Mr. Hay, as the Superintendent of Hyde Park, London, has for years been searching the globe for new plants for all types of gardening but especially for use in park beds and borders. In this book he has brought together his articles which had appeared in several of the English gardening magazines on such plants as he regards as the cream of his collecting. It makes a most desirable book for all adventuring gardeners who like to try out new plants and are keenly interested in the novelty's history. Almost all of the plants described are shown in excellent plates.

The material is alphabetically arranged and each plant is given a complete description. This includes its habitat, a clear description, its culture, its uses and in most cases notes on its introduction into cultivation. The only criticism that can be made is that there is neither an index of the plants listed nor a table of contents; therefore the busy gardener is compelled to thumb through the book unless he can remember the plants which are treated in it.

A. B.

A Woodland Garden. By A. T. Johnson. Country Life Limited, London, and Charles Scribner's Sons, New York. 232 pages including index and numerous illustrations.

Those fortunate gardeners who have read *A Garden in Wales* will know what to expect from the pen of A. T.

Johnson; they will not be disappointed. Mr. Johnson knows how to write and he also knows how to garden; he also knows plants as only a dirt gardener can: therefore any book he writes finds a place on my shelves, and should with all gardeners, a place that is near Bowles, Hort, Farrer and Ellacombe. In the next review the name of Dr. Stoker will be added to this list.

In the foreword Lord Aberconway makes the following pertinent observation: "A garden book has two essential qualifications: The first is that it should be written with an accurate knowledge of its subject. . . . The second . . . is that it should be readable." The present volume lives up to both.

Since the writing of *A Garden in Wales*, which was the story of the author's experience with the plants he grew—or sometimes did not grow—the garden has been enlarged and many new plants have been added. *A Woodland Garden* tells of this addition and of the adventures with new material both in the new plot of ground and in the old. As the title indicates, the plants considered are for the most part trees and shrubs; but among these are sunny slopes and open places where sun-loving plants may grow. The book abounds with cultural directions, beautiful combinations and keen observations both as to the plants' needs and well being and their special attractions at other seasons beside when in flower. Peat loving plants, especially heaths and rhododendrons, form the larger portion of material described.

More than a hundred very excellent plates add to the value of the book. They are all beautiful examples of

plant photography in which the detail of the flower or leaves is clearly shown without sacrificing or blurring the mass effect. The plates of *Cyclamen Coum* and *Erythronium Howellii* are a constant joy to me; and that of *Crocus speciosus* fairly takes one's breath away. It is good to find such excellent plates when so often fine garden books are spoiled with poor and mediocre illustrations.

For any gardener with a bit of woodland or a strip of shrubbery this book will be a priceless acquisition both as an inspiration and a cultural help.

A. B.

A Gardener's Progress. By Fred Stoker. Putnam, London, 1938. 457 pages including index; twenty-five plates and forty-three figures. 15s.

Dr. Stoker has for a number of years been an outstanding figure among English gardeners in two special fields, rock plants and lilies. The present book shows that his gardening activities are not by any means confined to these two fields; and, it is pleasant to note, it also shows that a man may be an enthusiast regarding a genus without being blind to the beauties of a thousand and one other divisions of the floral world. As noted in the preceding review, this reviewer places Dr. Stoker among the foremost gardening writers of the past fifty years, for he knows how to write pleasantly about the things he knows how to grow beautifully. Because these men possess this faculty their books are not solely for the English but for all gardeners as an inspiration and a guide.

The book traces the author's progress as a gardener; it tells of his mistakes and failures and of his correct-

ing those mistakes and learning to know the needs of the plants and the needs of his soil. It is written in a most engaging manner, so pleasantly in fact that a non-gardener would find it a pleasing and entertaining book to read. He does not take either himself or his garden so seriously that he fails to see the amusing side of garden enthusiasm; he is able to laugh at himself and at all other gardeners when their hobby or theories ride them.

To the type of gardener who constantly adheres to the theory that nature should always be followed, the Doctor makes this pertinent remark: "In the absence of clear-cut scientific rationale, it is the habit of gardeners to seek justification for their doings in those of nature, forgetful, maybe, that her activities are seldom so obvious as they seem. This unswerving faith in her mentorship, nay, her benevolence, is not altogether warranted. She is just as responsible for bark-splitting as for spreading a leafy mulch, and for throwing a plant out of the ground by means of frost as for breaking up clay with the same instrument. It may savor of impiety, but the truth is that the art of gardening is as much concerned with combating nature's handiwork as in its emulation. For our estimate of good and evil she cares nothing, and is as ready to throw her weight on the side of a disease bacterium as on that of the greatest plant alive." This extract not only shows the common sense and keen observation of the writer but also gives a suggestion of his style.

In the review of *A Woodland Garden* the plates were considered as perfect examples of plant photography. In this book the illustrations are perfect examples of drawing. They were all drawn in the author's garden by

H. A. Thomerson and are as lovely and as true to nature as those made by Mrs. G. M. Caroe for Salisbury's *The Living Garden*, which is high praise indeed. Would that more garden books were as well illustrated.

A. B.

Hardy Bulbs. Including Half-hardy Bulbs and Tuberos- and Fibrous-rooted Plants. By Lt. Col. C. H. Grey. Williams & Norgate, London. Vol. I. Iridaceae. 403 pages and 47 illustrations, some of which are colored. 36s. Vol. II. Amaryllidaceae, Commelinaceae, Haemodoraceae, Orchidaceae, Scitamineae. 366 pages and 47 illustrations, some of which are colored. 30s. Vol. III. Liliaceae. To be issued this autumn.

This is indeed a monumental work and can only be compared with Bean's *Trees and Shrubs* and Farrer's and Clay's *Rock Garden Plants*, for it is as encyclopedic in its scope. The two volumes now published show that the author has been very thorough in his work; an enormous amount of painstaking labor must have been expended in research work in regard to the listing of species only, not to mention the translating of the original descriptions and other research necessary for a book of this type. Then there has been the work of growing the material, for the author has grown most of the plants from imported roots and from seed. To all gardeners interested in bulbous plants these volumes will supply a long felt need.

The author's style is easy to read and is not encumbered with botanical terms which so often worry the beginner. There is a good glossary at the end of each volume to explain the few which are used. In all cases the plant descriptions are so clearly written as

to easily create a mental picture in the reader's mind. Of course all the bulbs hardy in the author's garden will not prove so in this country, but it would be great fun trying them out. The suggestions as to culture are all sane and well founded; but it is regrettable that he did not see fit to give fuller ones, especially regarding the rarer plants. That good drainage is an essential for the bulb's well being and adds to its chance of proving hardy is a point never to be forgotten. And I heartily agree with the author that autumn is the best time to sow seeds of bulbs—but how seldom are rare seeds to be had at that season here in America.

A few synonyms are confused, a minor fault indeed in so comprehensive a book, but rather annoying when the use is not made clear. Examples will be dealt with under the separate volumes.

It is to be regretted that the illustrations do not measure up to the text. The colored plates are well drawn but the coloring washed on in a rather crude manner and the greens are all bad. The black and white drawings are, for the most part, too much like crude block prints to be of any value in a technical plant book. To have omitted them would have reduced the price of the books, which would then have brought them into the hands of a larger number of gardeners.

Vol. I. As it is the duty of the reviewer to find fault, I feel justified to note some flaws and vaguenesses. On page 2 under *Acidanthera bicolor*, Hochstetter, we find "Messrs. Kelway have recently introduced it into commerce under the name of *Gladiolus Murielae* (q.v. for illustration)." On page 133 the flower is shown under its synonym. It would have been very easy to have corrected the name and

placed it in the right place in the text. *Crocus Sieheanus* is not listed, yet the name has been in Barr's catalog for four or five years. *C. Tomasinianus* is spelled with two *m*'s, although the writer says that "properly speaking," it should be spelled with one only. Why not have done so? *Iris biflora*, L., is a synonym for *I. subbiflora*, Brotero, as well as for *I. aphylla*, L., and is better known in relation to the first mentioned than to the second. The name *I. hyacinthiana* does not appear. It seems like baying at the moon to carp over such small items when one pauses to consider the tremendous amount of work involved in the collection of synonyms only in the groups mentioned above.

Vol. II. Being keenly interested in the snowdrops, I am disappointed to find the following omitted: *Galanthus cilicicus*, *Fosteri*, *Rachelae* and *Scharlokii*. *Narcissus moschatus* var. *Haworthii* is listed under *N. moschatus*, L., with the comment "is really no more than a tautology." As I read Pugsley he placed this plant as the type of his new species *alpestris*, retaining Linnaeus' name for a larger plant, as Linnaeus' herbarium specimen clearly shows. The Haworthian name should have been referred to *N. alpestris*, which Grey has treated earlier in his text. However, he may have a different plant in mind, for he refers to it as a "very difficult plant" and suggests growing it in "leaf-mould, sand and loam in a cool position with underground water." Here in a hotter climate than England's it has been happy for years growing through the grass of a lawn.

Again we have the tantalizing statement that *Sternbergia lutea* "commences to flower early in September, and remains in bloom regardless of weather until November." This occurs

in every English mention of this plant, yet I have never known it to flower longer than for three weeks, from late September until mid-October. Could there be a difference in the stock we have?

It is to be hoped that some adventurous American gardeners into whose hands these books will fall will find both the time and the money to import stocks of several of the hardier bulbs listed in these books. The duty and other expenses make them prohibitive when imported in small numbers by the gardener in moderate circumstances.

A. B.

Flowers in House and Garden. By Constance Spry. G. P. Putnam's Sons, New York, 1938. 180 pages, illus.

This is a delightful book that more or less successfully straddles a fence, because it really is not composed solely for the benefit of the armies of flower-arrangers nor yet for the gardening amateur. It is particularly not for the gardening amateur in the lowlier ranks, for it concerns itself with garden practices that are too elaborate save for the estate owner and with materials that are too tender for any place save a greenhouse. The one person who can read it with greatest profit and pleasure is the person, whoever he may be, who has a seeing eye and an imagination that can still be quickened by new ideas. It should be required reading for all "arrangers," because it will either confirm them in preferring their own methods or startle them into variations.

The illustrations are very clear. None of the arrangements included show any indication of anemia; a few do suggest high blood pressure. Nearly

all, shown in the settings where they were used, show clever relationship for the settings.

The World Was My Garden. By David Fairchild. Charles Scribner's Sons, New York; 1938. 494 pages, illustrated. \$3.75.

This is a most readable and entertaining book, whether one has known David Fairchild or not. The present reviewer has and has read the book with keener interest than most since, from the wealth of personal comment and remark, many bits of partial knowledge have been made more complete.

It is not a garden book, nor is it really a travel book, although it is allied to each. It is much more nearly an autobiography. From first page to last it records the effects upon the author of what he saw, felt, tasted, and heard in this amazing world through which he has moved in such comparative freedom, surrounded by a multitude of friends from whom he has gathered much.

Since much of the book involves time that many of us are too young to know, circumstances that lie outside our life patterns, places where we shall never set foot, people whom we shall never meet, experiences that we shall never undergo, the book has much of wonder and of glamour, of other-worldliness. Except for its human equations, its bits of history, the book will never be a source book, but rather a vivid personal living. The captious may look in vain for achievements that can be catalogued, ticketed and filed, but that will be only because the captious are often short-sighted and slow of wit. The intelligent reader will know, without having to read any review, that here we have a record of a

happy life that has set in motion innumerable valuable forces that have been carried far from the place of their conception.

Propagation of Plants. By M. G. Kains and L. M. McQuesten. Orange Judd Publishing Co., Inc., New York. 1938. 555 pages, illustrated. \$3.50.

The subtitle of this book reads, "A Complete Guide for Professional and Amateur Growers of Plants by Seeds, Layers, Grafting and Budding, with Chapters on Nursery and Greenhouse Management." This is in itself all the review that is needed. To all the old practices, so often dismissed as traditional lore, are added the findings of innumerable workers of the last decade. Everything of value has been seized upon, curtailed, edited, compressed until one has a book about as palatable as hardtack but just as much a life saver.

There will be some doubt as to why some credits have been assigned as they have and why some have been omitted. There will be some surprise at a few current omissions and some conjecture as to how soon the current research will require 500 more pages.

Roots, Their Place in Life and Legend. By Vernon Quinn. Frederick A. Stokes Co., New York. 1938. 230 pages, illustrated. \$2.00.

This like the author's other books is very pleasant reading and the illustrations by Marie Lawson are equally delightful. For the person who has no access to libraries of old books, this will perhaps be enough, for the author, here as before, does not keep close to the main issue; is not too slavishly devoted to accuracy and is not immune against indulgence in digressions and asides.

The Gardener's Pocketbook

Veratrum nigrum [See page 281]

Veratrum nigrum comes from northern Europe and Asia. It was cultivated by John Gerard in 1596 and was described and illustrated in Curtis Botanical Magazine (No. 963) in 1806, so it is a very ancient inhabitant of gardens.

Veratrum nigrum is a strikingly handsome hardy perennial of a very unusual type. A liliaceous plant of easy culture, it is just about as hardy as the proverbial "rock," having withstood without flinching a temperature of twenty degrees below zero at Gladwyne, and this with no protection of any kind, not even a few leaves.

A tall stout light green stem four to five feet high ascends from the center of several conspicuously ornamental bright green ovate leaves that are about a foot long. The upper part of the stem ends in a panicle, about a yard long, of myriads of miniature lily-like flowers colored a wonderful and most unusual shade of dark blackish red, according to Ridgway Diamine Brown. These grow so closely that they completely hide the stem. They open in July and remain in good condition for several weeks.

It grows in the same manner as *Veratrum viride*, commonly called False Hellebore, that is native to our part of the world.

The fact that veratrums are poisonous to eat renders them distasteful to vermin, a great asset in their favor.

Nearly every blossom forms a seed pod which ripens in due time, and during this period it has quite a fine bold and dignified appearance.

The requirements for successful cultivation of this plant seem to be a soil that is not too dry, composed largely

of leafmold kept open by an admixture of coarse sand, and shade from the hot mid-day sun. Given these conditions it grows lustily. In a dry soil it should have frequent waterings during the growing season, and then I believe it would stand full sun. My plant has been transplanted several times and it did well in each position.

I first read the description of this plant some twenty years ago and wanted it then. After trying to obtain plants for some years and failing at that, I began a hunt for seeds. After a lapse of a few more years, my search at last ended—some seeds of *Veratrum nigrum* were mine. That was nine years ago. The seeds were sown carefully in sandy peat in a cold frame on May 10, 1929, and in about two months' time there appeared a nice flock of little seedlings that looked like spears of fine grass. For two weeks they thrived and increased in size, until one unhappy morning when but two remained. All the others had disappeared overnight without a trace; a cut worm or perhaps a slug may have been the predatory creature. The two remaining little plants grew on for a year, still in the frame. They were fine and stocky and I moved them outside to my experimental plot.

The spring following only one plant awoke from its deep winter's sleep. It prospered mightily and in three more years repaid me for all the care I had given it by sending upwards a splendid spike over three feet tall of its miniature lilies that are colored so like *Lilium martagon dalmaticum*. No tender weakling this, and the year after that the panicle fully doubled in size and number of flowers, and reached a height of over four feet. The stem



Josephine Henry

Veratrum nigrum

[See page 280]

stands stiff and straight of its own accord and needs no staking, unless dogs are running around and likely to knock it over.

This year, 1938, it is bearing two splendid spikes of flowers that stand over five feet high, and everyone who sees it exclaims at its extraordinary beauty. Owing to its dark coloring, *Veratrum nigrum* has to be seen nearby, as at a distance its fine effect is lost. As it is not brilliantly colored many would pass it by, but anyone who appreciates the perfection of form of the flower of the lily tribe, or who likes flowers colored in blackish tones, would surely want this unusual plant.

And it has been in cultivation for 342 years!

Rather surprising that it is still so rare.

MARY G. HENRY.

Gladwyne, Pa.

Crinodendron

Crinodendron Pataqua Molina.

Family: Elaeocarpaceae.

Habitat: South Chile.

Introduced: Into England by Lobb in 1844; to California by Golden Gate Park in 1926.

Literature: Bailey, *Cyclopedia*, page 3377 (under *Tricuspidaria*); Bean, *Trees & Shrubs*, Vol. 2: 601; Reiche, *Flora de Chile*, Vol. 1: 266; Curtis *Bot. Magazine*, 7160 (see this for full synonymy and taxonomic discussion).

Synonyms: *Crinodendron hookerianum* Gay; *Tricuspidaria lanceolata* Miq.; *T. dependens* Hook., not Ruiz & Pavon; *T. hexapetala* Turcz.

Description: Evergreen shrub, its ascending to erect branches attaining a height of 5 to 30 feet; leaves many, oblong-lanceolate, acute, serrate, 2 to 3 inches long, about 1/2 inch broad, dark glossy-green above, paler beneath; the numerous flowers hang-

ing on long stalks from the leaf-axils of last year's growth; when open the corolla to 1 inch long, broadly urn-shaped, narrowed at the mouth, each segment with the characteristic three teeth at the apex, the color a bright coral-red; seed often produced, borne in a leathery, 3- to 5-valved capsule.

Culture: Propagation is usually most readily achieved by means of cuttings of the half-ripe wood, in summer or fall. Subsequently the plants are best grown on in pots, the potting-medium being a rich, well-drained mixture containing an adequate amount of peat and leafmold to be acid at all times. When planting out in a permanent location, the soil should be similarly acid and rich in humus. A shady and moist spot, or even a lath-house in the drier parts of California, will be found to suit our present item better than exposed, sunny, dry and windy spots. Watering, including ample syringing of the foliage, can scarcely be done too often, providing drainage is sufficient. Infestation with greedy scale is to be guarded against, as the plant appears sensitive to injury from this pest. If the syringing recommended proves inadequate, spraying with a 2% oilspray may be found effective and safe. Any pruning considered necessary should be done immediately after flowering, to avoid interference with next year's flowerbuds.

Remarks: Of Great Britain's famous gardens those are considered most noteworthy which, by reason of favored location, skillful cultivation, etc., are able to grow, out-of-doors, some of the many choice Chilean ornamental plants. Aside from the well-known Fuchsias, Escallonias, etc., which call for no special comment here, as they are quite sufficiently well-known in California, the subject of our



Eric Walther

Crinodendron Patagua

[See page 282]

present illustration may be considered as one of the finest of Chile's flowering shrubs. Introduced into California over 10 years ago, the item still continues to be quite rare in gardens, despite its undeniable merit and ease of propagation. Analyzing this fact, we find its probable cause in the failure of local gardeners to appreciate the insistence of this species of *Crinodendron* on shade, ample moisture and an acid, humous soil. Given these conditions, this choice Chilean should prove successful in most gardens of the Pacific Coast, as its survival in even some Scotch gardens indicates a fair degree of frost-resistance.

The generic name *Crinodendron*, from the Greek for "crown" and "tree," presumably refers to the shape

of the corolla; the peculiar three-toothed segments of the latter are alluded to in the invalid name *Tricuspidaria*. The sole other species known, *C. dependens* (Ruiz & Pavon) Schneider, is also grown here, and much better suited to the dry and sunny climate of California. It grows into a small tree, has broader, rough and dull grey-green leaves and a large number of smaller, pure white flowers. Experimentally, the last has been proven suitable for a grafting-stock of the choicer, red-flowered species. Hybridization may yet prove possible, once the two species can be flowered simultaneously.

ERIC WALTHER.

Golden Gate Park,

The Altadena Christmas Trees

The article, The Christmas Tree Planting at Altadena, in the April, 1937, number of your magazine has been brought to my attention by Emma Russell Heath of Berkeley, whose family were early-day residents of Pasadena—as was my father, Byron O. Clark. Mrs. Heath has suggested that it would be of interest to bring out Mr. Clark's part in the Christmas Tree avenue.

Mr. Clark established the Park Nursery Company in Pasadena in the 1880's, and had experience in growing nursery stock before he went to Pasadena (in 1882). He introduced rare plants and trees which later beautified Pasadena. Some account of his activities may be found in histories of Pasadena written by Dr. Reid and J. W. Wood.

He always stated to his family that he grew the deodars for the man who planted them. In order to check my mother's recollection of the matter (she is past eighty now) I recently asked her for whom my father grew the trees. She replied, "Why, for John and Fred Woodbury, who had a tract of land at Altadena."

We suppose that, being a nurseryman, my father was asked by the Woodburys to start the seed for them. No doubt he told us where the seed came from and who actually planted the trees after they were started; but it all happened such a long time ago that we do not remember the details. As my father died in 1929, it is not possible to refer the matter to him. I regret that records of his plant introduction and plant growing were not kept. He kept catalogs and bulletins, but not a diary of his own work.

It is especially interesting to me, under the circumstances, to read the account which you published. I wish

it were possible for me to see Mr. T. S. Hoag, who tells of planting the trees.

I remember that my father transplanted some well-grown evergreen trees from his place to the Stuart place on Orange Grove Avenue in the late 1890's. The moving was a major operation, with special equipment.

In addition, I should tell you that the name "Altadena" was coined by my father for his own home place on Lincoln Avenue, in North Pasadena, from "Pasadena" and the Spanish word "alta" (high). Our home was on the higher land toward the Sierra Madre Mountains. When the Woodburys were developing the tract of land now known as Altadena, they asked permission to use this name—and received it. This statement can be checked with that of J. W. Wood in his history of Pasadena.

Hoping this will add something of value to your information, I am,

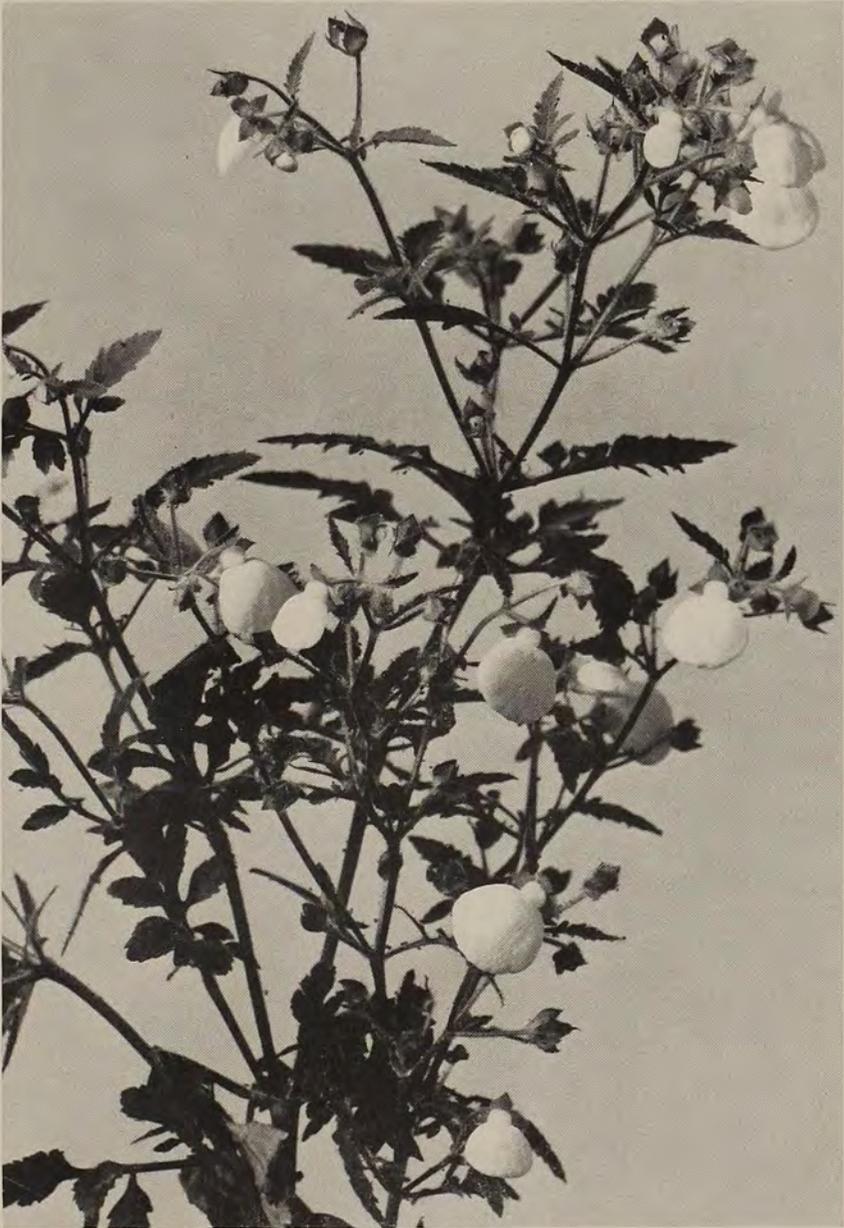
ADELINE CLARK NEVIN.

Palo Alto, Calif.

Calceolaria gracilis, an annual for a shady nook.

Where is there among gardeners one who does not have a shady spot that would be improved with a group of bright flowers? Too frequently one must be content with foliage plants or shrubs. Few indeed are the annuals that can be counted upon to produce bright flowers in satisfactory abundance in full shade. Just such a plant is *Calceolaria gracilis* H. B. K.

The accompany illustration is natural size and may be relied upon for the dimensions of the flowers and leaves. Unfortunately, it does not give a proper picture of the abundance of flowers so typical of the plant. A well grown plant in full flower gives a



Lilian A. Guernsey

Calceolaria gracilis

very effective mass of yellow. The plants attain a height of about 18 inches and a diameter of about 12 inches. They branch very freely and by early summer form compact, sturdy plants.

The inflorescence is an indeterminate dichotomous cyme, with flowers only on the upper side of each branch. In color, the flowers are as near a perfect match for Ridgway's Lemon Yellow as one could hope for. One could scarcely ask for a brighter color for shady places. The original description of the species states that the flowers are dotted and flecked with purple. In our strain, however, these dots are entirely lacking. The flowering season begins in late July and continues without lagging until frost.

The leaves are sessile and pinnate, with five to seven pairs of linear, sessile leaflets. They are opposite on the lower part of the stems but alternate on the inflorescences. The leaves and stems are thickly covered with viscid-glandular hairs. The glandular secretion is sticky enough that the fine seeds may be found adhering to all parts of the plant.

Seeds are produced in great quantity and require only a few weeks from time of flowering to maturity. It is hoped that the plant will self sow, but, as yet, it has not had that opportunity.

The cultural requirements have proved simple. Plants tried in full sun failed before July 1, but those planted against the north wall of a building in full shade have been entirely satisfactory. It has been tried in acid soil only, so, of course, its tolerance to alkali is unknown. It seems to want a fairly free supply of water in a well drained soil. As it will not withstand frost, it is probably

best to start the plants indoors and to transplant after the weather is settled.

Calceolaria gracilis is a native of Ecuador and Peru at altitudes of about 8,000 feet, where it is said to grow on river banks.

CLAUDE HOPE.

Washington, D. C.

Colchicum and other autumn notes

The first colchicum are showing; their buds, coming up, look like small white knobs—they elongate themselves daily and gradually flush a rosy pink. All the early ones are *C. speciosum*, *Bornmulleri* or *Gigantea*, and seem quite a few weeks earlier than the *C. autumnale* and *C. autumnale alba*.

The *C. speciosum alba* is by far the most beautiful of all, but is of a finicky disposition and some years the very few I have do not show up at all in autumn, though their big, somewhat coarse leaves have been freely produced the preceding spring.

The leaves of all colchicum make a bold showing in April, then ripening turn an ugly yellow brown, so most of my collection are grown under periwinkle, so when the leaves reach this unattractive stage, they can be tucked under the arching sprays of dark green glossy periwinkle.

C. speciosum is the variety most easily procured in this country. The flower is a soft rosy pink, the petals rounded, the effect globular.

C. autumnale with narrow pointed petals is a deeper pink, verging on magenta, and is very telling in mass, and quite a week later putting in its appearance. *C. autumnale alba* is only pretty because such a spring-like bulbous flower is unexpected in September; it does look well, however, amidst the dark green periwinkle and increases rapidly.

C. Bornmulleri and *C. Gigantea* seem much alike and are stunning tulip-shaped flowers of a deep, deep rose, the long perianth being white; some are almost white until they are their full height, which is at least twelve inches. Growing through the periwinkle tends to make them taller.

September 15th. Having just been out, braving the rain, which always comes to spoil them, I find 25 flowers out and several buds coming in one group which my notes say were replanted in this place in 1932, four bulbs being put back in this spot. They usually average four flowers to a bulb, so this would be running true. Must refer to old John Weathers and his Bulb Book to see if he calls the colchicum a corm or a bulb. They are of a curious shape, being like a long fish-hook, and one plants this hook part downward and the top of the creature almost at the top of the soil. They are covered with a sheath of dark red-brown skin of a leathery texture and as they form new corms within this sheath, it gradually becomes too tight for the new ones and they split the covering and edge themselves away from the parent.

To return to September 3rd, which is when these notes were made except for the above digression on the colchicum's behavior—how difficult it is to dig bulbs in autumn when their tops no longer show. Of course one should have correct symmetrical plantings of the rarer ones and that effort has been made. As space gave out or time to dig was limited, a dozen *Narcissi* Cheerfulness were planted along the narrow rose borders on a bank. The good drainage and sheltered position gave fine flowers, though there was a greenish tinge to the little double flowers that gave a different effect from

the waxy white gardenia-like stalk shown at the winter Flower Show.

Today trying to dig some, they seemed much deeper than the remembered planting, and when suddenly the fork turned out some mother bulbs and their progeny, it was surprising the size all had attained.

Bulbs of *Thelma*, Queen of the North, etc., planted in double rows in the truck-garden had been left in too long, some six years, and had almost reached the top of the ground; the prolific increase had raised each bulb into a family tree.

The Michaelmas daisies had this year a treatment of what English call de-shooting and are much the better for it. They also advocated de-shooting chrysanthemums and some annuals such as *centaurea* and marigolds, but our American spring is so quick and growth so fast, one would have to have a thousand helpers to do all at the right moment. This graphic word to de-shoot means what we call pinching; when the growth is a few inches high, take out many of the new shoots, just as one would thin annuals. In the case of the Michaelmas daisies, I took out a great number, leaving only three or four strong ones. This is easier than digging and replanting pieces and seems to answer just as well. The colors of the Michaelmas daisies and other asters are a hopeless mass of confusion, owing to their all having been left to go to seed some years ago. One can recognize the natives by their leaves, and the white ones always stay white, the tiny heather-like one from Rhode Island and the tall gray-leaved, snowy white one from North Carolina and the soft gray-blue of our own hills. The *Novae Angliae* are descendants of Mrs. Raynor, the first pink one, and the usual purple and blue. All seem to har-

monize with the Phlox, now in its second and third bloom, owing to the shears being kept busy on it during July, so not a seed head remained. The heads are somewhat small—it needs re-setting, but the effect is good, and only the salmon phlox would be out of place, so these are segregated where no asters are allowed.

One white *Clematis virginica* is at its best stage and has climbed into a Fringe tree (*Chionanthus retusa*), where it reproduces the spring loveliness of that best of small native trees.

Clematis is also on the spruce tree hedge along the north side of the garden, which is now about 30 feet high. All the *C. virginica* is not fragrant except with a slight sweetness, but one early one is like honey and haunts one at night as it drapes itself beautifully over the kitchen windows and the prosaic garbage can.

The Heavenly Blue morning-glory is an excellent climber to plant with the clematis while the latter is young. The morning-glory, being only annual, may be discontinued when the clematis grows strong. The seed, soaked until it pops, then planted in small pots in the house in March and April, gives best results when not put out too early. Let them miss the first great heats of the early spring, then they are at their best in September. Otherwise they may turn yellow and die off, just when their beauty is wanted.

F. E. McILVAINE.

Downingtown, Pa.

Rosa gigantea

About *Rosa gigantea*—we have had a merry hunt for that rose. Some of the seeds I sent to E. O. Orpet of Santa Barbara, others to T. H. Goodspeed and planted some myself. None apparently germinated. I received some other seed purporting to be of

gigantea through Professor Goodspeed and of those I have two seedlings, but they curiously are anything but *gigantea* in their two year old stage; in fact, I have had the greatest of difficulty in keeping them alive at Los Altos. I budded from one of them a number of plants on the Frank Meyer's *odorata* so-called, and these plants are doing a little better, but they are still small and exhibit none of the features of *Rosa gigantea* Collett.

Mrs. Anson Blake of Berkeley sent me three additional seeds of *Rosa gigantea* which someone had sent her from Burma. Of these one germinated and it is growing.

I have a number of roses which are called *gigantea* but which I suspect are hybrids of *moschata*. However, the foliage is almost identical with that illustrated in Miss Willmott's book. The one that follows the description most clearly I received from Mr. Hugh Evans of Santa Monica, whom doubtless you know, a splendid gardener who has introduced many plants. His is a wonderful rose covering a great fence with a perfect cloud of huge white blooms, and with hips which are round and red and hard. The blooms, however, have a little tinge of yellow at the centers when young.

I also have some plants raised from seed sent me by Mr. Alister Clark of Glenara, Melbourne, Australia, the plants which he used in his many *gigantea* hybrids such as Gwen Nash, Kitty Kinninmonth, Harbinger, Flying Colours, but the seedlings I have raised from Clark's seeds have not bloomed.

Another strain I received from Mr. Orpet of *Rosa gigantea* imported by the late Dr. Franchesci. That is a magnificent grower but it has flowers in corymbs instead of in solitary ar-

rangement and has elongated yellow hips.

Still another I received from Father Schoener of Santa Barbara, he stating that it came from Assam. This is one of the finest of the group, for its foliage, while resembling very much that of *gigantea* (Collett) as set forth in Miss Willmott's book, is of a dark green, darker than the others, but is quite luminous; the leaflets are completely glabrous on both sides, absolutely resistant to mildew and aphid; in fact, I know of no disease which affects the plant. Furthermore, it is apparently hardier than the rest, for it hardly shed a leaf during the comparatively severe frost of last winter, although it grew by itself in an exposed position.

When all of these seedlings have developed enough to show their bloom, we may be able to determine which is the true *gigantea* Collett.

I stated that the *gigantea* Collett has solitary flowers, as it appears in England, but I read in Brandis' "Trees of India" that the rose sometimes has its inflorescence in corymbs.

There is another rose which is almost indistinguishable from the *gigantea* described by Miss Willmott and, quoting from George Watt, which Watt calls *Rosa macrocarpa*. Now I am not at all sure but Alister Clark's *gigantea* is really *macrocarpa*.

EMMET RIXFORD, M.D.

Hippeastrum ambiguum Herb. [See page 291]

When *Hippeastrum ambiguum* flowered at Washington, during May and June, it was immediately recognized as something quite distinct from those previously mentioned in these pages. The first efforts at identification fur-

ther confirmed this thought. Because of the long perianth tube, it was apparently near *H. solandriflorum*, but, because of the trifid stigma, it could not be of that species. The trifid stigma and the pink striping of the perianth suggested *H. vittatum*, but the length of the tube and size of flowers excluded that species. Hence, it seems quite possible that our plant is a hybrid of the two species. Fortunately, there are available several descriptions, accompanied by illustrations, of hippeastrums considered by Baker (Handbook of Amaryllideae) to be representative of this cross, namely: Edward's Botanical Register t. 876—1825—*Amaryllis solandraeflora* var. *vittata* Lindl. From Cayenne, Fr. Guiana. Idem t. 988—1826—*Amaryllis vittata* var. *Harrisonae* Lindley, from Lima. Gartenflora: t. 949 and 956. 1878. *Amaryllis solandriflora* var. *conspicua* Kunth., from Brazil. Curtis' Botanical Magazine t. 3542, 1837. *Hippeastrum ambiguum* Herb. from Lima. Idem t. 7737, 1900. *Hippeastrum Harrisoni* (Lindl.) Hook., from Uruguay. Mrs. Edward Bury, Hexandrian Plants—T. 27—*Amaryllis Harrisoni* Lindley.

Our plant agrees fairly well with all of these except the first one, and there seems to be no difference in any respect between ours and *H. ambiguum* Herb. *Amaryllis solandriflora* var. *conspicua* is much redder than any of the others. *Hippeastrum Harrisoni* (Lindl.) Hook. and *Amaryllis vittata* var. *Harrisonae* Lindl. are similar but smaller throughout. Of course, all may be of hybrid origin and, if so, there would be considerable variation in the group. It should be noted that the plant illustrated in Table 876, Edward's Botanical Register, is probably not to be considered with the others mentioned, and is probably a form of

Hippeastrum solandriflorum. It has a trilobed stigma and the flowers are not colored within.

In Curtis' Botanical Magazine under t. 3542, *Hippeastrum ambiguum*, the following statement is made: ". . . The beard is fainter than in *H. vittatum*, and the plant occupies an intermediate situation between that species and *H. solandriflorum*. Whether it be a garden production at Lima, or exhibits a natural local variation of the genus, we have no means of ascertaining; it seems principally distinguished from Tweedie's specimen gathered on the east coast of the continent by the superior size and, perhaps, paler colour. . . ."

The origin of the hybrid, if it is one, and the agency responsible for its distribution remain to be accounted for. Our plant was collected in two locations in Costa Rica, and in one case was thought to be a native. However, it seems more likely that it was an escape. The place of collection of the others is given above. Such a wide range, in this genus, indicates that man has been an agent in dissemination. *H. solandriflorum* has been found throughout northeastern South America. *H. vittatum* is known only from Peru. It seems safe then to conclude that our plant is either a natural variable species, or an artificial hybrid. It is to be hoped that a crop of seedlings may be raised to flowering, so that additional evidence may be had.

The flowers of this hippeastrum are remarkably similar in form to those of the trumpet lilies; in size they are exceeded only by those of *H. solandriflorum*. The perianth tube is 2 to 3 inches long; above the tube, the segments adhere for four or five inches. Throughout the tubular portion, the slope or flare is uniform. In the regularity of the flower, the similarity to

the trumpet lilies is again borne out. The segments are evenly spaced, except for the lowest inner one; it stands apart slightly from the others. All are similarly marked, and all are about equal in width and shape. As may be seen in the accompanying illustration, the margins of the segments, along the expanded portions, are lightly crisped.

The color of the flowers is less striking than in many hippeastrums, although it is quite pleasing. It consists of a white base over which are spread two bands of mauve-pink stripes (deepest along the veins) on either side of the rather wide midveins of each segment. At the throat of the tube, the white and pink merge into light green. Outside the tube is green marked with purplish bands.

The peduncle is quite tall, between 30 and 36 inches in height, and moderately stout. It is distinctly glaucous and light green in color. From six to eight flowers are produced, of which not more than three are open at one time.

At the time of flowering, the leaves are not more than half matured and do not reach full size until several weeks later. They eventually reach a length of 2 to 2½ feet and a breadth of over 2 inches. They are bright green in color and very similar to the leaves of *H. vittatum*. The tips are noticeably obtuse and the margins are characteristically cartilaginous.

The bulb is quite short necked, or rather without a neck. It attains a diameter of 3 to 4 inches. It has rather more than the ordinary number of brown, papery outer coats.

CLAUDE HOPE.

New York Botanical Garden Courses

The New York Botanical Garden offers courses of professional training to gardeners, nurserymen and florists. There are grants for Student Garden-



Lilian A. Guernsey

Hippeastrum ambiguum



Lilian A. Guernsey

Hippeastrum ambiguum



H. H. Everett

Caltha palustris

ers who must have certain qualification, for Apprentice Gardeners who must have still others, and a special Science Course for professional gardeners. In addition there is a Course in Practical Gardening designed for professional and amateur gardeners. Inquiries in regard to any of these should be made at once at the Administration Building.

Marsh Marigold (Caltha palustris)
[See above]

Here are some pictures of *Caltha palustris* which give a little idea of their habitat. I followed them through the Gaspé along the little streams with their feet in the water at times, at others in the marsh. Their lovely color pleased me. They are as lovely as pigmy waterlilies, both flowers and

plant, and on the table, as a cut flower, they last for days. The petals can be described as waxy and their color is truly luscious. I wish we had it in iris.

I looked up the range in Britton and Browne and found it extended as

far as Nebraska. Now if it can stand Nebraska drought and high temperatures why don't we see it? If not here, why not in the East or in more favored climates.

H. H. EVERETT.

Lincoln, Nebr.

CORRECTION

Mr. Wyndham Hayward has pointed out that the note on *Hippeastrum equestre* from Mr. Shull in our issue of July, 1938, pictured and described not that species, but *Hippeastrum rutilum* var. *crocatum*.

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