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Robert L. Taylor

African Violet, Trilby

Developing New Chrysanthemums

E. J. KRAUS

In spite of the excellence of many recent introductions of chrysanthemums, there still remains the need for types that bloom ahead of severe frosts, but that will continue in bloom over a long period of time, for such types that are sufficiently petal hardy whose flowers and opening buds are not greatly injured or discolored by frosts, or even light freezes. Particularly desirable are the early flowering varieties that will resist the low temperatures of northern winters and survive the freezes and thaws of late winter and early spring when the ground is bare of snow, mulch, or other cover.

The development of winter hardy varieties of any herbaceous plant involves very many complexities. It is less difficult to select one resistant to severe cold than to conditions of alternate freezing and thawing. The most trying problem of all is to secure those that do not become sensitized or tenderized during the last days of winter and early spring, by starting into growth during a period of warm weather that is followed by an extremely cold one.

My own experience during the past ten years has been that a clone having numerous rhizomes that spread out from the main stem two or more inches below the surface of the soil, which tend to produce during the autumn a sufficient root system to keep the plant firmly anchored, is more likely to prove winter hardy than clones that produce few rhizomes. It is particularly advantageous also, if the tips of these rhizomes do not come above the surface of the soil, and, above all, that they do not start active growth during a brief

warm spell in late winter. The possession of these characteristics, however, does not absolutely insure winter hardiness.

The record of the experiences of those who have been working for more than a century on the problem of winter hardiness in various plants still leaves doubt as to what characteristics do insure winter hardiness. My own experience shows clearly that seasonal conditions vary so widely between different localities or even within any single locality that the hardiness of a given clone can be determined only after a number of years of testing in various regions and under several methods of culture.

The same principles hold true in selecting for bud and petal hardiness. Seasonal conditions prevailing during the growing period, especially those just immediately preceding final bud swelling and flowering, exert a profound influence on the degree of frost or freezing injury at any given temperature. And, of course, as is well known, the conditions immediately following a frost or freeze are very important. Usually there is far less injury if the forenoon following a night of frost is cool or cloudy or rainy. Alas, all too frequently, the sun bursts out bright and warm, and by noon the garden may become a sorry sight indeed.

Unfortunately for him who is endeavoring to select for hardiness, no two autumns are quite the same—a severe freeze may come by mid-September, or not before the end of October. But he need not feel too worried over this for sooner or later, out of a series of years, will come a test autumn with

an early, genuine freeze. Then is the time for a stout heart and resolute purpose. Out must go all the promising selections and accumulations through perhaps four or five years, and only those that have withstood the test be retained, or, perhaps one should say, those that have come nearest to the goal sought, for perfection seems always to lie ahead, and never quite attained.

My own work, or rather, I should say, pleasure, has now extended through 12 years, and during this time, I have grown many thousands of seedlings, one year 14 acres of them, though under present circumstances very few things are grown. From among all the hundreds of original field selections that have been made, all but 100 have been already discarded. A few have sufficient merit for introduction and trial in order to determine whether a clone may truly establish a place for itself in the wide range of conditions under which it must be grown. To prove truly worthy in everyman's garden is an enormous demand, indeed.

As to their time of blooming, chrysanthemums are highly sensitive to photo-period, differences in day length between north and south. They are even more responsive to temperature, most of them coming into bloom earlier and more quickly in cool weather than in warm. Blooming is greatly accelerated by cool nights. Some clones are far less adapted to withstand ill effects of rainy or foggy weather than are others. During prolonged periods of warm, rainy weather, leaves may blacken and drop, a characteristic that may be shown one year and not another. The tone and intensity of color is deeper in cooler weather. In the case of varieties that are not completely double, the relative size of the yellow open center varies with growing conditions.

An enumeration of various characters and their relation to environmental and cultural conditions would make a long list. The perfect variety is still to be attained. And then, too, don't forget the things called personal preferences and popularity. What one person most admires may be distasteful to another.

The greatest force that will aid in hastening progress is a larger group of patient individuals who will help in the growing and selection of additional good varieties. It is doubtful, indeed, if any individual working at one place could possibly select a number of varieties that would prove superlative for all other areas. The day should be hastened and welcomed when there will be a number of individuals working under particular environments for which varieties may be developed and selected. Among these workers let there be a free interchange of materials and constructive criticism. Adulation and condemnation come in adequate abundance without solicitation. Neither is particularly helpful. It is with the hope that others may become interested that I set down some of my experiences through the past number of years in which I have been trying for hardy clones.

SOURCE OF PARENT STOCKS

One of the varieties selected because of its winter hardiness was a common form known to grow and bloom year after year in dooryards, old gardens in neglected corners, exposed or in partial shade, and more or less overgrown by weeds or grass. The bushes are tall and scraggling, but in October, give a fair wealth of small, crowded, magenta flowers, often still in bloom after the early snows have partially covered them.

The memory of this variety as it grew in my grandfather's garden, year

after year, more than 50 years ago, was an impelling factor in my decision to use it as a possible parent. In the same category is another somewhat similar variety. It is equally hardy, is not so tall, and has nearly double white flowers that turn purple and brown soon after expanding. I have followed its annual performance here on the sandy soils of Chicago for many years. Whatever their undesirable qualities, both of these varieties possess the great merit of hardiness to cold, and compete favorably year after year with miscellaneous crowding vegetation.

Several years ago I secured several very small, dwarfish plants from one of the parks in Fort Wayne, Indiana. These were said to have come from seed from Japan, and although the plants were not winter hardy, and the flowers small and of little value, the plants bloomed in mid-June. These particular plants have long since died, but they have contributed the character of early bloom that persists in some of their now distant offspring.

Through the U. S. Department of Agriculture several plants of hardy, early flowering varieties, from among the hundreds of seedlings grown and tested by F. L. Mulford, were secured. Each plant was different in form and color. They were of the same general hereditary stock as the dozen or more varieties since named and introduced by the Department of Agriculture, but none of the latter was among them. Of those secured, one proved entirely sterile in crossing, but two others produced seeds abundantly when interpollinated or when crossed with those from other sources.

On several occasions I have used the yellow variety, Algonquin, both as a seed and pollen parent. It is a relatively early and profuse bloomer, entirely winter hardy here at Chicago,

and a vigorous grower. Similarly, Geronimo (bronze) has also been used sparingly because of its early blooming habit, and in some of the first crosses, Seminole (white) was used because it, too, is relatively early and profuse in blooming. Both tend to lose their foliage rather early here at Chicago and all have soft petals. As they age, the flowers assume a tassel-like form that results in a somewhat wilted appearance. Despite this, they are very valuable to any breeding program and have definite garden value because they are early and winter hardy.

The Korean variety, Mars, was used one year in some of the crosses because it is a rich deep red. Many interesting forms and colors were secured and by self pollination of the best of these seedlings, some desirable individuals have been obtained. Most of the seedlings bloomed later than October 5, and so were discarded. A few early flowering plants of this line have been continued, however, and by crossing these with some of the earliest flowering types from other lines of descent, hardy varieties of desirable plant form and good red color and style of flower are being secured.

Red varieties are of several types. Many have the reverse of the petals light gray or white, which gives the floral mass a washed-out appearance. Others are bright when they first open but soon fade to a red brown or dull copper red, which is quite unattractive. Those of a third class are deep rich velvety red, somewhat lighter on the back of the petals. They often age to a darker color, but they are definitely red, not a confused mixture courteously referred to as red. Such varieties have flowers unusually resistant to frost injury. Even though slightly injured, they still have great garden value long after most varieties have

faded and gone to winter's oblivion.

Similarly, the variety Astrid was used several years ago as a parent. It was employed because it was reputed to be exceptionally winter hardy. Actually, it has not proven to be so, either at Chicago, or at Lake Geneva, Wisconsin. No plant of it persisted there through more than two winters. Also, during some years, it made very large bushy plants that produced no bloom whatsoever. Nearly all the seedlings resulting from this cross were single, although some were duplex, and others semi-double. All were very late in blooming and, in general, the petals were subject to frost injury.

Because of these characteristics, Astrid has not been used during the past eight years as a parent, but from among the earlier crosses a few plants were saved. By self pollinating or crossing, some of those of earliest bloom, with the very earliest blooming plants from other lines, a few attractive seedlings were secured. The flowers range from single to fully double, the plants are upright and compact. The flowers of the original crosses of Astrid were unusually beautiful in color and texture, having form and finish of highest excellence. A few of the derivatives from this parentage also show this finish, but this line is not now being continued because it produced a high percentage of single flowers, and especially because the plants tend to come into bloom late in the season. This would not be a serious drawback in regions regularly having a mild, prolonged autumn season, nor would it be under the conditions that prevailed in the vicinity of Chicago during 1940 or 1944, but ordinarily such a season cannot be expected.

Other varieties that have entered into our selection work are greenhouse forms of various types and colors, some

of them not winter hardy, others partially so. The variety, Glory of Seven Oaks, is hardy most winters, here in Chicago, and many of its offspring have a characteristic twiggy form, suitable for borders, perhaps, but the plants tend to be very brittle, so much so, that after they attain some size or are about to come into bloom, they split apart from their own weight, especially after a rain, or are easily broken during cultivation, or even by brushing against them.

The use of greenhouse varieties has resulted in a great range of flower type and plant form, but has also meant vigilance and vigorous adherence to ideals in discarding everything that is not strictly hardy when tested in the open garden. No specific line of parentage from these early crosses is now being continued, but it was from them that a complete color range was first secured.

Extensive use has been made of many of the varieties selected and introduced by Mr. Alex Cumming and by Professor Longley. Attempts are made to secure various promising new introductions as they appear, to test them for at least a year in the open ground and to leave them out over winter under natural conditions. If the variety survives and offers some characteristic not already inherent in clones previously selected, it may be used in future crosses. Occasionally, even though a clone does not survive the winter, it may be used if it has some outstanding quality.

The list of varieties used is far too long to mention them all individually, but the very interesting color and sheen of Granny Scoville, and the color, plant habit and comparative hardiness of Autumn Lights, deserve special mention. Chippewa has given lavenders and purples. I have not used Amelia,

despite its early blooming habit, because longer individual flower stems than it possesses were desired, and because, in any event, its bushy form occurs many times among my seedlings. For somewhat similar reasons, single forms have not been generally used. Some appear in nearly every line each year, although the number now occurring is relatively few.

As already stated, any new clone offering possibilities of improvement of our present lines will be tried, but for the most part, crosses are now confined to selections whose parentage is known, often through several generations.

SELECTING AND TESTING THE NEW CLONES

Each year from ten to thirty thousand seedlings have been grown in the gardens and field at Lake Geneva, Wisconsin. During the past 12 years, more than 300,000 individual seedlings have been grown. During the summer and fall the seedling plants are inspected from time to time for desirable individuals of distinctive merit. In early autumn, those selected are lifted from the garden and brought into the greenhouse and saved along with others for seed production. After the seed has matured, the plants are set aside until spring. Cuttings are then made, and later the plants are set out in the open garden.

I used to think some years ago, that I obtained many good things, but time changes viewpoints. Perhaps, too, others have had experience similar to my own in going over the fields, making the final selections with a resolve to make no more. Then come friends, amateurs, professionals, and the list of the saved could increase tenfold, but resistance to add more remains firm. More truthfully, one should say rather firm, because nearly always a few se-

lections are added with the excuse, "Oh, well, these things can be discarded if they really are not worthy." As a matter of fact, more often than not those selected after some hesitation do not prove worthy. On the other hand, I have more than once discarded a numbered selection, and been happy later to pick up a plant of it from some acquaintance who had more faith and persistence in trying it out than had I.

Individual preferences vary. That is why growing chrysanthemums from seed is a very interesting adventure. But one should not anticipate that first-year seedlings will necessarily appear the same when grown the second and succeeding years in the garden.

No one can predict with absolute certainty the degree of winter hardiness of any seedling until it has been tested under a wide range of climatic conditions and soil types. And, too, the shape, shades, and tints of flowers, the height and general form of plant, vary appreciably with the environmental conditions and seasonal variations under which it is grown.

If permanence in the border or garden is expected, all plants should have undergone tests for at least two or three years for winter hardiness, and have demonstrated the form they are likely to continue to show. Five years would be more desirable. But it is doubtful if, in general, so long a period is likely to intervene between the time of selection of a clone and its ultimate introduction.

To me, there does not seem a real need for summer blooming clones to compete with summer annuals. The chrysanthemum is at its best with the changing and heightening colors of autumn as the summer garden is fading. Clones that are sufficiently early to come into flower before severe frosts are very desirable, but if they have a

short blooming period, and are wilted and sere just as the glory of fall is coming to its height, much is lost. There are early flowering varieties that continue in bloom for weeks on new shoots produced as the season advances. These are indeed choice, and more of them are needed. And there is room for more of the later blooming types that are sufficiently bud hardy to withstand frosts and even freezes. This is particularly true for the darker flowered varieties whose colors blend with sumac, hard maple, and scarlet and mahogany of oaks, and the rich golds of other trees and shrubs. Among the most satisfying of all, in northern latitudes, are the few that even though lightly touched by frost, still possess great garden value even at the end of October, or during early November.

These are the somewhat prosaic details of the evolution of our work to date. But they tell little of our many thrills and pleasures, and not a few disappointments. These must be individually experienced. However, I shall never forget the thrill I had one autumn when gazing across the tree-encircled test garden at Lake Geneva, where the selections of many hybridizers are grown each year. Here, after several nights of frost and freezing weather, the scene bathed in the glow

of a November sun, more than twenty-five varieties gave back a full symphony of color, ranging from saffron to darkest ruby, a deep, full "Song of Autumn," in the cathedral of this quiet woodland.

We now have varieties ranging in blooming season from mid-July into November. The first period is too early, and the latter, sometimes, too late. North of Chicago, in average years, frosts and light freezes occur before then. If the variety is strictly petal hardy, however, as some of the newer ones are, they often provide a good show of color up to and into, November, and though the flowers may no longer be of exhibition quality, the mass garden effects repay any effort.

I do not expect any clone, either of my own choosing, or that selected by anyone else, to prove of equal value everywhere. Such paragons of perfection are products of wishful thinking, not realities. Since this is so, and because of the increasing interest in growing hardy chrysanthemums, let me express once more, the hope that activity in selecting varieties adapted to specific needs and tastes will increase. The joyous thought of prolonging the season of color in autumn gardens is abundant recompense for whatever amount of patience and care may be required.

× *Iris aureonympha*, Golden Nymph

EDITH HARDIN ENGLISH

The genetic adventure of planning the existence of a plant with certain definite and desirable characteristics and years later seeing that very entity blooming in profusion in the garden, is an experience to warm the heart of any plant lover. Such an adventure is appurtenant to the history of *Iris aureonympha*, Golden Nymph.

In May 1936, just about the time that *Iris innominata* was at its height of bloom, there came a rain storm that pommelled its lovely golden blossoms to the earth. It was this pathetic sight that awakened the desire for a plant that would have not only the handsome golden blossoms of *I. innominata* but also sturdy upright stems. Hybridization offered the way for the needed improvement.

Nearby in the garden grew a short compact form of *I. Douglasiana* which had been chosen and collected as an individual of merit on a slope covered with plants of this species in southern Oregon. Having proved such a substantial and satisfactory member of the garden, this particular plant was selected as the parent that would contribute the desired characters. True, it had violet-lavender flowers which were not wanted in the prospective hybrid, but this trait eventually could be eliminated. To its credit, *I. Douglasiana* bore two flowers to a stem whereas *I. innominata* had but one.

The plants of *I. innominata* had come into our garden in an interesting manner. One winter evening in 1930 Mrs. John R. Leach, of Portland, Oregon, had said to my husband, "Here are some seeds of the lovely new iris that we discovered in southern Oregon.

I want you to have these seeds. See if they cannot be made to grow in your garden." Happily they did grow, being very likely the first of this new species to be grown in cultivation. Even moving them to Seattle when they were tiny seedlings did not dampen their enthusiasm for growing. In February 1930 Professor L. F. Henderson published Mrs. Leach's newly discovered plant as *Iris innominata*, in *Rhodora*, Vol. 32. Thus *I. innominata* began its botanical and horticultural careers almost simultaneously.

In May 1936 my first attempt at hybridization of *I. Douglasiana* and *I. innominata* was made, the flower head being carefully bagged and labeled. This attempt, however, met with failure. The rain storm which had continued made conditions most unfavorable.

The following May the work of hybridization was begun anew, the cross between *I. Douglasiana* and *I. innominata* being made both ways, that is, using both species for seed-bearing parents. On August 9, 1937 nineteen very wizened and abnormal looking seeds were collected from the *I. innominata* parent. On September 18 of that same year, 134 plump, well-formed seeds were harvested from the *I. Douglasiana* parent. All of the seeds from both plants were sown in two respective pots and kept out of doors over the winter.

The following spring brought forth only one plant from the nineteen wizened seeds. From the 134 plump seeds there came an abundance of healthy little grass-like plants. These were transplanted as soon as they were



Edith Hardin English

Iris Douglasiana



Edith Hardin English

Iris innominata



Edith Hardin English

Iris innominata, the golden-flowered paternal parent, with 182 blooms.



Edith Hardin English

Test plot containing the 72 original offspring of the *Iris Douglasiana*
× *I. innominata* cross.



Edith Hardin English

× *Iris aureonympha*

large enough to handle and the soil in the pot left undisturbed. The following spring another lot of these original seeds germinated, making seventy-two plants in all from the harvest of *I. Douglasiana*.

Then came the wait throughout the seasons while I carefully weeded and cultivated the tiny seedlings, exercising meanwhile the abundance of faith that the hybridizer of plants must maintain. Finally with the third spring the longed-for floral offerings appeared. Each morning I hurried out to the plot to see what miracles the night had wrought, resisting with considerable effort the temptation to pry open the buds to see what color the flowers would be.

Whatever the dainty little *I. innominata* lacked in ability to produce plump, fat seeds was more than counterbalanced by its ability to transmit the apparently dominant golden color. Such an interesting assortment of yellows appeared, the varying degrees of veining and shading making no two truly identical. It was surprising to find such a meager amount of violet-lavender in evidence at all.

The one lone plant, grown from the seeds of *I. innominata*, combined the characters least desired, frailty and the lavender color. I have kept this plant and have a certain scientific interest in it because it represents, no doubt, the recessive characters. It is, in fact, fairly attractive, but it could never become the prima donna that loving admirers have made of \times *I. aureo-nympha*, Golden Nymph.

It was not until the third year of bloom, when ample opportunity had been granted to study and compare the blossoms, that Golden Nymph was set apart from the others as something special, to be propagated, photographed and named. The quality which made

this plant outstanding among its numerous sisters was a certain air of daintiness, an attribute of golden, frilled femininity which, incidentally, suggested its name. Upon seeing Golden Nymph for the first time nearly everyone says, "Why, it looks just like an orchid."

The veining, so prominent in both its parents, is reduced to delicate markings of deeper yellow. The flower, throughout, is of soft golden yellow. Happily, like its maternal parent, it bears two flowers to each stem. True to its purpose of coming into being, this hybrid has sturdy stems that stand up well in rainy weather.

Among the remaining seventy-one sister plants are several that show real promise and in due time will be studied and named. One diminutive individual with short leaves and big golden flowers should make a very suitable subject for the partly shaded rock garden.

The most pleasing part of the entire experiment was the fact that I found my Golden Nymph among the plants of the F_1 generation. F_2 generation plants are now on their way to demonstrate what treasures they can produce.

To anyone wishing to try similar experiments with other genera I cannot emphasize too strongly the importance of working with species rather than with plants that have resulted from so many crosses and re-crosses that their genetic characters are a hodge-podge.

The horticultural requirements of Golden Nymph are very simple. The soil in which it is thriving is slightly acid, ordinary garden loam. Morning sunlight with afternoon shade has proved most satisfactory for producing lovely flowers. Propagation, of course, must be vegetative. At the end of the blooming season the fibrous roots are washed clean and cut into natural divisions with a sharp knife. It is im-

portant that the roots be kept wet during this process and then reset as soon as possible as the tiny fibers dry out all too quickly. Removal of the fruiting stem at the time of division is advisable. The longer leaves should be removed from the divisions as the amount of evaporation can thus be reduced, giving the plants better opportunity to start new growth. The common practice of bobbing all the leaves is to be avoided as it has been demonstrated that the auxins which promote growth are formed in the leaf tips.

Golden Nymph can take her place successfully in the front of the perennial border, in mass planting or in the partly shaded rock garden. Here in Seattle the flowering of this plant usually begins the third week in May and extends on into June.

× *Iris aureonympha*, Golden Nymph
(*Iris Douglasiana* ♀ ×
I. innominata ♂)

Rootstock slender, forming tufts. Stems slender and flattened, 25-30 cm. tall with 3-6 leaves; basal leaves glabrous, usually surpassing the stem, 27-57 cm. long, 6-13 mm. wide, dark green and glossy above, paler beneath, intermediate between the two parents;

flowers frilled, soft golden yellow throughout, 2 in each unbel; sepals wavy, veining deep yellow, 6.5-7 cm. long, 33 mm. wide; petals erect, wavy, oblanceolate, 6 cm. long, 1.5 cm. wide; pedicel 12-18 mm. long; styles 25 mm. long; stamens 30 mm. long; anthers yellow, 15 mm. long; bracts green, acute, 5-7 cm. long; capsule strongly angled, 4.7 cm. long.

Perennis; scapis gracilibus compressis 25-30 cm. altis; foliis glabris 27-57 cm. longis, 6-13 mm. latis, inter parentes intermediis; floribus 2 luteis; sepalis crispis 6.5-7 cm. longis, 33 mm. latis; petalis oblanceolatis crispis erectis 6 cm. longis, 1.5 cm. latis; antheris luteis 15 mm. longis; capsulis angulatis 4.7 cm. longis.

The name, *aureonympha*, is the combination of two Latin words, *aureus*, meaning golden, and *nympha*, a beautiful demi-goddess.

Specimens: No. 3037, May 22, 1941 (TYPE), in herbarium of Carl S. English, Jr., and Edith Hardin English, Seattle, Washington. Clastotypes deposited in herbarium of L. H. Bailey, Ithaca, N. Y., and herbarium at State College of Washington, Pullman, Washington.
Seattle, Washington

More About African Violets

B. Y. MORRISON

Today, when one feels that almost any home at which he might inquire would produce an African Violet or, at least, a leaf or leaves in process of becoming a plant, it is hard to think that fifty years ago the European journals were recording the furore of its first appearance. Hooker, writing in *Curtis Botanical Magazine* the text to accompany plate 7408 (1895) says: "It does not often happen that a plant newly introduced into Europe can claim the honour accorded to the subject of this plate, of being within two years of its flowering figured in five first-class horticultural periodicals."

These were, as nearly as can be discovered: *Gartenflora* (Berlin, 1893); the *Gardener's Chronicle* (London, 1893); *Revue Horticole* (Paris, 1893); *l'Horticulture Belge et Etranger* (Brussels, 1894); *Illustrierte Monatschrift für Gartenbau* (Erfurt, 1894); *Bull. della R. Societa Toscana di Orticultura* (Florence, 1894); *Curtis Botanical Magazine* (London, 1895). After this there seems to be a lapse until 1901 when Ed. André begins again in *Revue Horticole*.

As one can surmise there is considerable repetition among these authors and the illustrations were by no means of equal value or even accuracy.

Herman Wendland named and described both genus and species in *Gartenflora* (1893) calling the genus after Baron St. Paul-Ilaire, Hofmarschall a. D. in Fischbach Silesia, who had received the plants from his son, the Imperial District Governor of Usambara, the East African Province where rises the tongue-filling mountain, Kilimanjaro, often mentioned in the French

notes. Although it is not expressly stated, it appears that plants were sent and, knowing the modern precautions in shipping, one wonders how this succulent plant, so easily bruised, made the journey from Usambara to Silesia!

Quoting Hooker again, one reads the letter quoted by him from the elder St. Paul-Ilaire. "The *Saintpaulia* was discovered by my son, who lives in East Africa, where he owns plantations of *Vanilla* and *India-rubber* trees. It was found in two localities; one about an hour from Tanga, in wooded places, in the fissures of limestone rocks, as well as in rich soil with plenty of vegetable matter. This place is not more than fifty to one hundred and fifty feet above the sea level. The second place is in the primeval forest of Usambara, likewise in shady situations, but on granite rocks, two thousand five hundred feet above the sea. It is much more plentiful in the former place. Several varieties have been discovered but all are blue."

Here perhaps began the folly, still continued, of calling the flowers "blue" which they are not.

A modest number of books on German East Africa have been examined in the hope that one would be found with some note in regard to the African Violet in its native heath. The famous German botanist Engler, writing in 1893 and again in 1895, discusses at considerable length the vegetation zones or areas and gives rather suitable lists of trees and shrubs which set the character of each area. Unfortunately, he mentions few herbaceous plants other than grasses.

J. F. V. Phillips, writing in 1931 and



Robert L. Taylor

African Violet, Amethyst

using the work of Engler and others as a point of departure, gives a much more elaborate classification, but like his predecessors pays relatively little attention to the herbs.

There are several passages in Phillips' work that discuss the climate of the areas where *Saintpaulia* is probably native that make something of a claim on the grower's attention. In discussing the vegetation of the coastal zone—"10-20 miles wide, ***elevation sea level to 300 feet," he says that it is "a zone of high atmospheric humidity. In its northern position it experiences the two rainy seasons of the Monsoon climate, but in the south the one rainy season of the Trade Wind climate. The mean annual rainfall ranges from 30 to 60 inches, the fall being greater in the northern than in the southern portion.*** mean annual temperature lies between 77° and 82° F., the absolute maximum range being about 30°."

Going on to a discussion of the coastal hinterland, which is defined as from "10 to 20 miles inland to the foothills of the mountain buttresses of the Central Plateau, ranges from 300 to about 2000 feet elevation. Not only is this zone characterized by a somewhat lower humidity, but also its actual rainfall is less than on the coast, while its temperature too is lower. Extremes of temperature and humidity are more marked than on the coast proper. North of about 8° southern latitude there are two rainy seasons, south thereof, but one."

Since the Violet was collected originally in Usambara Province, a few lines from "The Vegetation of the Eastern Slopes of the Great Ranges" is useful since it reports that the area "is characterized by a high humidity, heavy rainfall (from 40 to 80 inches and over) and a temperature lower than that of the coast hinterland (mean annual tem-

perature between 64° and 70° Fahr.) but showing marked extremes (41° to 97° F.). North of 7° southern latitude there are two rainy seasons.

(A sketch of the Floral Regions of Tanganyika Territory, Trans. of the Royal Society of South Africa. Vol. XIX, Part 4, pp. 363-372—1931.)

If, as is suggested by the letter of Baron St. Paul quoted by Hooker, our deduction is correct and the Usambara violet is more common at elevations not over "fifty to one hundred and fifty feet above the sea level," we have to note that it comes from an area which enjoys an almost uniform temperature throughout the year and with rainfall as high as 60 inches coming, since Tanga lies in the Monsoon area (it is north of 80 S.L.), in two long seasons, growing in leaf soil in the shade of what is probably semi-deciduous forest, the plant must have known conditions that were most distinct from those it suffers as a house plant today. It can be argued, of course, that no plant is necessarily happy save in a replica of its native heath and this point need not be pressed too far. It seems reasonable to believe, however, that most growers do not give the plant the leaf litter and the porosity needed in the soil mixture and that the discussions about watering have to be related to drainage rather than amounts, either in quantity or time of application.

Through the kindness of Dr. P. J. Greenway, Systematic Botanist, East African Research Institute, Amani, Tanganyika Territory, it is possible to give here his reply to my inquiry as to the native conditions under which the species might still be found, together with replies to other questions. In writing him, there was sent the transcript of the original notation as to the sites where found.



Robert L. Taylor

African Violet, Blue Boy

"I believe 'about one hour from Tanga in wooded places in the fissures of limestone rocks' to be the caves near the mouth of the Sigi River* in the Amboni District about 5 miles north of Tanga. The limestone is the crystalline Jurassic limestone and the *Saintpaulia* is still there and grows in a layer of humus in crevices of the rocks. I doubt if the altitude reaches 100 ft. above sea level.

"As far as I know, there are at least 6-9 species, some have not yet been described, but they are all shades of blue from nearly white to a royal purple and I was told of a red one that they had at Kew but which I have not seen in nature. Some species form a rosette whilst others form mats on the faces of rocks.

"The East Usambara mountains are gneiss and not granites and I am of the opinion that lime is not essential to the growth of *Saintpaulia*, nor is a deep soil, provided they have a certain amount of well-drained humus, plenty of gritty sand or even rock chips, shade, a fairly constant temperature of about 70° F. and a humidity of about 75% they should do well. The East Usambara mountains, c. 1,000 to 4,000 ft. alt., seem to be their main center of distribution with outliers; other localities are limestone hills just north of Tanga; West Usambara mountains (gneiss), and the Chyulu Hills (gneiss and volcanic) in Kenya just north of the eastern end of Kenya-Tanganyika Boundary. Altitude 50-7,000 ft. 3,000-3,500 usual. In the East Usambara they are found on top and the faces of gneiss rocks usually growing in a very thin layer of humus with their roots attached to the rock, in rain forest usually on the banks of forest streams, but not always.

"I think they like the moist rock face as a rooting medium; the East Usam-

bara soils are very acid.

"They do set seeds in the wilds but not very freely."

Apparently no one caviled at Wendland's scientific description, but more than one objected to his proposed common name, which put into English is "Usambara Violet."

Many noted its resemblance to the Pyrenean *Gesneriad*, *Ramondia*, which is a difficult rock plant except where there is a congenial combination of climate and site.

Ed. André, writing in *Revue Horticole* (1893), is the first to speak at some length of the horticultural aspects of the case. He mentioned the variations in flower color among the plants raised from seed by Wendland and wonders if the species would hybridize with other *Gesneriads*. He also notes: "One does not know as yet if the plant will be bulbous like *Gloxinia*, the first roots raised from seed are still in full growth and continuous flowering***. One may also try multiplication by cuttings of the fleshy leaves."

The commercial production rights were granted to Ernst Benard of Erfurt, Germany. And Ed. Pynaert (1893) writing in *l'Horticulture Belge et Etranger* after recapitulating much of what had already been published, adds: "The plant shows a floriferousness without equal. Mr. Benary * * * says that 'seedlings begin to flower a month after germination. The interest attached to this charming novelty is again increased by the fact that its flowering is uninterrupted all winter.' Mr. Benard also notes the curious modifications in color for this species. It has been observed that the plants with pale green leaves produce flowers of pale tonality while those with dark leaves carry flowers of an intense blue. * * * The seed of *Saintpaulia* is exceedingly fine. They should be treated like



Robert L. Taylor

African Violet, Blue Girl



Robert L. Taylor

African Violet, Bicolor



Robert L. Taylor

African Violet, Ionantha



Robert L. Taylor

African Violet, Orchid Lady



Robert L. Taylor

African Violet, Purple King

those of *Streptocarpus*. * * * Saintpaulia is easily propagated by leaf cuttings, but it does not form bulbs as do most of the Gesneriads. * * * Cultivation is very simple naturally in a hot-house during our winters * * *."

Nothing of special note appears in the general "literature" until 1901 when Ed. André, writing again in *Revue Horticole*, describes the use of the plant bedded into a rock garden at La Croix in precisely the situation that *Raimondia* would require, perfect drainage, a north exposure and good leaf soil. It appears that it flourished beyond hope and flowered without interruption. André remarks that one can salvage the plants in autumn or leave them to die. His plants were actually planted near *Raimondias*, but he tentatively suggests various delicate ferns or *Selaginellas* for company.

Again (1902) in the same journal, André reports color forms raised by "M. J. Sallico, horticulturist at Neuilly (Seine)" which were figured in color—*Saintpaulia ionantha alba* with pure white flowers; *S. i. rubra* plum colored; *S. i. violacea* definitely violet. The text also reports that Benary of Erfurt "announces a Saintpaulia with red flowers," also "one will soon see several bronzy purple varieties."

Another interesting bit reported by André in the same article is that Mr. J. Sallier tells that "these plants are particularly pleased by a soil from pine needles such as one collects in a pine-wood from the foot of trees."

Someone, signing his article as "H." and writing in the *Garden* (Vol. LXX-IV, No. 1997 (1910)), gives a good discussion of growing Saintpaulias, but this, like almost all others, is based on the assumption that one has a greenhouse. The only new data are those reporting color forms—*purpurea* with "extra dark violet-colored flowers,"

grandiflora violacea, "deeper-colored blossoms, which are of large size"; *albescens* which "has white flowers which are, however, sometimes tinged with pink or blue."

Another note in the *Garden*, unsigned, for January 9, 1915 (Vol. LXXIX, No. 2251) gives fairly explicit directions for growing seedlings, a routine that almost resembles that for ericaceous plants save in the speed in which plants come to flowering. "Seedlings raised in early spring often commence to flower in August, and, if given a warm greenhouse temperature, will continue well into the winter." (This report seems much more normal than the one month originally reported by M. Benary.)

As compared with the earlier days, the decade following the introduction of the plant, our own decade is characterized not only by the repetition of enthusiasm and the production of new named clones from seed, but also by the fact that the writers in garden periodicals are almost without exception private individuals who have succumbed to the pleasures of growing African Violets largely because they are so easily propagated by leaf cuttings. Beginning in the mid-30's and continuing in greater numbers, there have been shorter or longer pieces about the home culture of the Saintpaulia in practically every one of the popular magazines.

Our own journal published a brief but rather complete note in January, 1941, by Mrs. Waters of Cincinnati, who had long been a successful grower of African violets under house conditions and still grows them. She is much more specific in all her recommendations than many others, but her proposals as to soil, light, and watering—which have been successful for her—are by no means identical with those



Robert L. Taylor

African Violet, Red Head

recommended by other growers. In fact, the modern magazine literature is full of contradictory bits, and also with scraps of information that are incomplete in themselves.

After reading them all, it would seem that anyone can grow African Violets, provided he does not treat them as a true xerophyte or a true aquatic. The degree of wetness appears to be something that each home owner, using a slackening of growth and a yellowing of leaves as the danger signal for either extreme, must decide for himself. The soil mixture must be porous, rich in coarse humus and quick draining. If it is not, there will be the usual difficulties of rot at the crowns. Light can be anything you please, provided you recall that full sunlight will give fine bloom and not so fine foliage, and that weak light will give good foliage and little bloom. Each grower can adjust his plants to the best light he can provide.

In regard to home propagation, all evidence points to the soundness of the statement that only well-matured leaves should be used. Different growers express preferences as to the month when leaf cuttings should be made, but as far as the present writer can determine, good leaves root more swiftly if there will be good uniform rather high temperatures, which for the amateur without a greenhouse means either mid-summer or with some artificial heat in winter. Cuttings placed in water to root in an ordinary office room August 7 showed first roots on August 26 but really did not make a root system sufficient for planting out before mid-September. Leaf cuttings planted in a sand-peat mixture without heat rooted and produced small plants in two months. Another lot planted August 18 produced no plants before December.

The young plants may arise from the cut base of the petiole or at the junc-

tion of petiole and blade. In some cases more than one small plant forms which can be teased apart and planted separately, although this does not seem to be the practice in many commercial firms.

All modern advice tends to stress the use of the smallest possible pot. This is not the recommendation of the growers of the early introduction, who apparently believed in one repotting after another until the plants were in six inch bulb pans. Their photographs show good plants with fine masses of bloom above the foliage. From the appearance of the leaves, it seems fairly certain that the plants had more than one growing crown per pot. Some people feel that the beauty of the plant is impaired when there is more than one growing point since this obscures the leaf pattern of the rosette.

For the person who can go to a nursery or shop, buy his plant and walk away, there are no special problems in beginning to grow African Violets. For the person who must depend upon plants shipped from a distance, it should be said that of all the material bought from nurseries, only one shipment has come through in perfect condition, but the plants cost twice the normal charge. The other shipments showed care in packing in all cases but in one case little judgment since the heavy pots were not removed and they, shaken loose in the carton, broke practically every leaf from the plants save the smallest about the growing center.

In spite of all this, it would seem almost safe to say that, unless the stalk from which the leaves are produced—and eventually the flowers—is bruised or broken, the plant will survive.

The writer's own practice has been to cut off every bruised or broken leaf, most of which are too damaged to use for propagation, pot very carefully, wa-



Robert L. Taylor

African Violet, Sapphire

ter abundantly, and stand in a damp, almost dark, spot until there are definite signs of new leaf growth from the center, usually about two weeks. After that the plant can take more light.

In the choice of varieties, the individual must suit his own taste. Varieties range in flower color through deep purples to plum reds, skip fairly well over the "orchid" tones to pale clear pinks and pale lavenders to tinted and pure whites. This writer has seen but not flowered the variety "bicolor" which is a charming sort with the two

upper corolla lobes very dark and the lower three lighter as in our native birds-foot violet in its bicolor form. He has read of a similar bicolor in red tonalities. Other variations appear in the length and carriage of the petioles, the size, shape and serrations of the leaves, not forgetting those clones which have shown widened vein tissues or ruffled blades! Some leaves are silvery beneath, others reddish; all are covered with silky hairs but some more so than others. In short, the plant shows all the minute variations that make it a fine collectors' item.

A Book or Two

Tuberous Begonias. Worth Brown. M. Barrows and Company, Inc., New York, 1948. 128 pages, illustrated. \$2.75.

This is another of the series of usually rather small volumes gotten out from this house, that give succinctly and well the essential facts in regard to the subject under discussion.

Tuberous begonias form only a small section of the great Genus, *Begonia*, but perhaps because they are more easily shipped as dry roots, they have come into greater currency of use than any of the other forms. Certainly their large and astonishingly varied flowers, particularly those of the one garden race that is most frequently offered make an instant claim on the attention of the gardener who can grow them under a variety of conditions, some more to the liking of the plant than others. One suspects that the botany of the situation has been rather glossed over but this reviewer is in no position to take issue. The point of the book is this: these are the tuberous begonias, their beauty is diverse, their uses as

well, the difficulties that you will meet are about as follows. The final decisions are left to the reader, to grow or not to grow them.

Bulbs for Home Gardeners. John C. Wister. Oxford University Press, New York, 1948. 270 pages, illustrated. \$5.00.

"First published under the title 'Bulbs for American Gardens' and long considered the most authoritative American book on bulbs, it has now been completely revised and brought up to date." So one reads the text on the inside of the dust cover.

Readers of this journal will recall the earlier volume and those who do not have it will want this issue. As in all of Dr. Wister's writings one finds a wealth of detail both historical and factual but there is often the feeling that the text smells rather of the library than the garden. This is too bad, for Wister is a gardener and could have made it otherwise. This point of view is perhaps captious since after all one does not expect an encyclopedia to

read like a novel and one need not expect a source book to read like a book of experiences. One could wish as well that the illustrations had been brought up to date and that the line drawings had been redrawn for they are mostly quite poor. In spite of these remarks, it is a book to have and use not only in the garden itself, but when buying and again when preparing a talk for the garden club.

Colorado Cacti. Charles H. Boissevain and Carol Davidson. Abbey Garden Press, Pasadena, California, 1940. 71 pages and index, illustrated.

This is the type of local flora, in this case for a single order, that is of enormous interest and value to the people who live close at hand, to all those who must concern themselves with the problems of plant distribution and should also be of particular interest to gardeners who travel about, whether merely for the pleasure of seeing plants as they grow in Nature or whether they have their own study problems to consider. As is true of all the imprints from the Abbey Press, this small volume in flexible board covers is a charming thing.

The reviewer is in no position to criticize the text, but can and does say that he has read the non-technical portions with the greatest pleasure and could wish that all taxonomists could be persuaded to give as lengthy discussions after they have finished up the required space for the technical requirements.

The photographs are delightful as well as full of informative detail. The line drawings have all the best features of clarity and good design.

The Arboretum and Botanical Gardens of North America. Donald Wyman.

Published by the American Association of Botanical Gardens and Arboretums and printed by the Chronica Botanica, Waltham, Mass., 1947. \$1.50.

The countries covered are Canada, Cuba and the United States. The information gathered will be of greater use to the members of staffs of such institutions than to any other, but the gardener who travels will find much useful data on the specialties of the several gardens and what he may well expect to find for his instruction.

The terms arboretums and botanic gardens have been interpreted in rather broad and perhaps in a wishful manner, for there are certainly included some worthy spots that could not possibly be included if the terms were properly administered.

The Royal Botanical Expedition to New Spain. Harold William Rickett. Chronica Botanica Co., Waltham, Mass., 1948. 86 pages, illustrated. \$2.50.

While possibly the professional botanist who may be concerned with history as well, will find in this issue, which is Number 1 of Volume II of Chronica Botanica itself, more to his immediate use than the ordinary gardener, Dr. Rickett writes with great gusto, and no gardener who has any interest in the historical backgrounds of plant introduction will fail to find a lively pleasure in reading the book. For those who have had to struggle with inadequate appropriations for the support of botanical projects, with the patent stupidities of those who might well be understanding, there will be additional chuckles.

The Botanical Garden concerned here is that in Mexico City.

If you, reader, are concerned about any botanical project in your own com-

munity, read this and see how comical your own board may appear years from now, should you fail of giving the kind of intelligent support to the project in hand.

Mrs. Foote's Rose Book. Harriett Risley Foote. Charles T. Branford Co., Boston, Mass., 1948. 168 pages, illustrated. \$3.00.

Any one who has been in touch with the work both amateur and professional in the rose world through the last quarter century will know of the work of Mrs. Foote and of the success that has been connected not only with her own garden but in those others that she has designed and planted. No one among those persons can fail to have the liveliest interest in what she has set down "for the record." She herself plainly states the case. She is keenly aware of the difference between opinion and principle. She tells in this book how she arrived at the decisions that have guided her practice and gives her reasons for abiding by the judgments.

This is not a book to be handed to any one but a serious gardener who will read it with understanding. It is simply written and no one need fear that it is beyond him. The greatest good, however, will come for the reader with understanding. This is not, just another rose book, it is a must for the rose grower and one that can serve as a basis for study to any other gardener who is undertaking a serious project for in it are all basic elements for a good experiment begun with intelligence and improved through the years with growing understanding.

Maintenance of Shade and Ornamental Trees. P. P. Pirone. Second Edi-

tion. Oxford University Press, New York, 1948.

The preface to the second edition states: "The present edition has been prepared for three reasons: First, to describe all the more important and new insecticides, fungicides and arboricultural machinery that are now on the market. Second, to bring up-to-date the ever-increasing number of diseases and insect pests to which shade and ornamental trees are susceptible. Third, to make available once more a book that arborists and tree owners have found to be of considerable help."

As will be remembered by readers of this journal, the book is a reference book to which one turns for help in time of trouble, rather than a book one reads for the pleasure of reading. One should read it through in order to grasp the problem as a whole, the major underlying problem of the maintenance of health in woody plants. It is written simply and clearly and happily without the depressing atmosphere that so often makes the reading of such texts an impediment to work. One could wish that all the illustrations had been remade for many, in spite of all claims to the contrary are far from clear and would not help the uninitiated too greatly.

Fairchild Tropical Garden. Lucita H. Wait. The Ronald Press Company, New York, 1948. 381 pages, illustrated. \$3.00.

The sub-title of the book reads "The First Ten Years." No one can read the book without interest in the record of success that has been so happily recorded and wish the continued success of the enterprise in which so many human hearts and hands have combined. It is a very personal book and is filled with names and faces, with details of small incidents, with the records of deeds

that seem slight on first thought but which taken together make an imposing record.

After reading the book many thoughts arise. One is impressed with the terrific urge for the preservation of things. This speaks keenly to the reader who has lived through an era full of destruction. It speaks continuously of the growing apprehension of beauty that should be the major concern of all gardeners, whether the beauty be that resulting from the use of plants in creating the garden scene, or only that very personal understanding that comes from the considered regard one gives the plant itself.

It is a book that should be read by all persons concerned with the establishment and maintenance of living plant collection. It should be read by all who may yearn to have similar collections in their own locality where the expression may take another form peculiar to their own countryside. It must be read by all who have little faith in what plants can do to bring greater understanding and happiness into the world in which we live.

Science and the Glasshouse. W. J. C. Lawrence. Oliver and Boyd, London, England, 1948. 174 pages, illustrated. 15/

We quote: "An endeavor to give as a result of wide experiment at the John Innes Horticultural Institution scientifically based and easily understandable solutions to the three main problems facing glasshouse growers:

Soil: Part I outlines the preparation of the scientifically balanced soil mixtures; the John Innes Seed and Potting composts.

Plants: Part II deals with methods of using the composts and of handling plants.

Light: Part III deals with the structure of the glasshouse—the shape, sitting, and materials.

And finally a summary is given of the various advantages growers have obtained, and will obtain, from the Institution's careful experimentation and cautious deductions, all of which will demand time, space and labour such as the ordinary grower is unable to devote."

The Gardener's Pocketbook

Cornus stolonifera flaviramea

The bleakness of the winter garden can be compensated in part by the use of evergreens, berried plants and colored stems. However, evergreens become somber looking through color changes and an accumulation of soot, and the berries that are bright and gay lose the color and shape or are devoured by the birds, leaving only a few mummies. By spring the only bright spots in the garden are the colored twigs of the few plants that are included in the shrub border.

One plant that is bright and gay at this season as winter starts to end is the golden twiggled dogwood. The young stems are a bright yellow green that is certainly striking among the dark gray and brown of the mass of other shrubs.

The habit of the plant is fairly spreading although they are adaptable to surrounding with crowded plants going up about eight feet and unshaded ones spreading about six feet. Low branches will also reach the ground and form natural layers.

The plants will grow in any good soil. The species, which is native near here, is found in most situations, edges of ponds, streams, and moist pockets and also on rather dry hills. Apparently like many other plants it can make the best of any situation once established.

The young growth of the dogwoods is the colorful part. Older stems lack the brilliance of the young ones so pruning should be done to induce an abundance of new growth. Flowers are not important although the small clusters are not unattractive. Foliage is rather coarse but a good color. The plant can be used for coarse hedges, screens, or as specimens for winter color. The species has red stems but is not as commonly seen as the European species *alba* but has a brighter red.

For twig color this is very good and dependable. Plant near the house where the branches can be seen from the windows.

Rose Acacia.

One of the less common shrubs that is useful for midsummer bloom is the rose acacia (*Robinia hispida*). Generally this plant blooms about the first of June in this region and continues for many weeks. The flowers are a light rose pink and produced in drooping small clusters that hang from the stems. They are pea shaped and about a half inch across in the species. However, there are several forms that have much larger and showier flowers.

The plant has attractive compound leaves and an irregular growth that would fit in well in oriental landscaping. While this is decidedly different as a shrub it has little screening ability and is best grown in front of taller items as a flowering item.

Some nurseries have the larger flowering varieties grown in the standard

form. Here the plant has been grafted on a three foot stem of the common black locust and the result is a round headed plant that has the very showy attractive flowers well placed for effect. These can be used as specimens in flower gardens and are very effective.

The plant will stand considerable shade or full sun. They are not fussy in soil requirements. The bush type may be used to naturalize on bank as it does spread some by suckers.

ELDRED E. GREEN.

Striping in Azaleas.

In the course of many years of breeding azaleas of the *Obtusum* sub-series, there was occasion to use among other clonal varieties, the sort known in the South as *Vittata Fortunei*. This is a rather straggling plant of the Indian azalea type with a habit of intermittent flowering in mild weather through the winter in the South. It also shows a tendency to produce branches with self-colored flowers, usually of the color of the stripe, less often pure white.

Seedlings from it have produced in their turn, more or less in the proportions one might expect, flowers with white ground and variously colored stripes, depending largely upon the other parent used.

When these were studied with some attention, it was observed that many of them in this climate (Washington, D. C.) showed similar striping and flecking of color in the leaves when autumn approached with a dark color in the stripe or fleck showing clearly on the green and holding its own even when autumn color suffused the balance of the blade. This is not true of '*Vittata Fortunei*' itself in this garden.

The striping is by no means uniform nor does it always indicate that the seedling itself will bear striped flowers

for unless it has a white ground the stripes do not appear. The only case, as yet, in which striping has appeared on a colored ground, has come as a branch sport on a plant with the proper ancestry, but with self colored flowers. Doubtless in time other examples will appear as pictures from old books show dark stripes on light colored grounds in many cases, usually however, with an irregular white margin.

This latter appears usually as a branch sport on a seedling that will have a striped ancestor, once or twice removed. In only two cases, as yet, out of many thousands of seedlings flowered, have there seedlings that appear to be entirely uniform over the entire plant, in producing flowers, with the white margins. It is entirely conceivable of course, that the sporting factor got in its work, immediately the plant made its true growth above the cotyledons.

There have been some cases in which the striping was so limited that one had to search to find it, but it could be detected.

It has not been possible to find any plant of *Rhododendron indicum variegatum* which must remain therefore a book name for this garden. So it has been impossible to tell if there might be stripes in the winter colorations of that line.

It can be said, however, that as yet no seedling has appeared among the thousands with foliage closely resembling that if *R. indicum* in which stripes have been detected in the foliage. There are appearing this year, for the first time, a few seedlings in several populations in which *R. indicum* is a dominant factor, in which the leaf habit is

only slightly modified and in which the typical striping appears. It shows also in various seedlings of quite complicated pedigree, that carry foliage that is only little different from that of many of the Kurume clones. These last are to flower in 1949, so it cannot be told as yet what the flower pattern will be, if any. It is hoped that at least a portion of them will be white grounds, and there is some hope of this since the green ground of the leaf is keeping its green color, usually an indication that the flower color will be either white or light pink.

From the gardener's point of view these striped and flaked flowers are delightful but the nurseryman will look upon them with displeasure, since he must be certain each time he takes cuttings that they are taken only from branches that bear the patterned flowers.

In the writer's own note taking, he has used the term stripe to indicate a narrow band of color that would extend from the margin to the corolla to or nearly to the center of the corolla; flake, to indicate a similar band but of short extension; sanding, to indicate an over-all pattern of dots and tiny lines, and occasionally, when forgetful, fleck to indicate a very short line, never a dot.

In the strictest sense dots rarely occur save in the make-up of the 'blotch' which is the colored area on the uppermost lobe of the corolla, spreading to the two adjoining lobes at times. The dots, there may be simple, almost sagitate, and at times almost confluent. If they are heavily pigmented they add a vigorous contrast to the flower color.

B. Y. M.

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SOCIETIES AFFILIATED WITH THE AMERICAN HORTICULTURAL SOCIETY

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State Agricultural Society,
P. O. Box 2036,
Sacramento 9, Calif.

Takoma Horticultural Club,
A. C. Barret, Pres.,
4719 Brandywine St., N. W.,
Washington, D. C.

The San Francisco Garden Club,
465 Post St.,
San Francisco 6, Calif.

Trinity County Garden Club,
Mrs. Rose N. Grigsby, Treas.,
Weaverville, Calif.

The Trowel Club,
Mrs. J. Douglas Rollow,
4524 Cathedral St., N. W.,
Washington, D. C.

Tulsa Garden Club,
Mrs. Allen Henry, Pres.,
1301 South Yale,
Tulsa 4, Okla.

Victoria Horticultural Society,
Mr. Jack G. Beastall, Sec'y.,
255 Battleford Ave.,
Victoria, B. C., Canada

Vivian Garden Club
Vivian, La.

West Hills Horticulture Society,
5420 S. W. Alfred St.,
Portland 19, Oregon

Welcome Garden Club
Mrs. J. A. Reid, Pres.,
400 Speed Drive,
Monroe, La.

Winnsboro Garden Club,
Winnsboro, La.

Woodridge Garden Club,
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INVITES to membership all persons who are interested in the development of a great national society that shall serve as an ever growing center for the dissemination of the common knowledge of the members. There is no requirement for membership other than this and no reward beyond a share in the development of the organization.

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

The American Horticultural Society invites not only personal memberships but affiliations with horticultural societies and clubs. To such it offers some special inducements in memberships. Memberships are by the calendar year.

The Annual Meeting of the Society is held in Washington, D. C., and members are invited to attend the special lectures that are given at that time. These are announced to the membership at the time of balloting.

The annual dues are three dollars the year, payable in advance; life membership is one hundred dollars; inquiry as to affiliation should be addressed to the Secretary, 821 Washington Loan and Trust Building.