

The NATIONAL
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JULY 1927

The American Horticultural Society

A Union of The National Horticultural Society and The American Horticultural Society, at Washington, D. C. Devoted to the popularizing of all phases of Horticulture: Ornamental Gardening, including Landscape Gardening and Amateur Flower Gardening; Professional Flower Gardening or Floriculture; Vegetable Gardening; Fruit Growing and all activities allied with Horticulture

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Some Annuals for Rock Gardens and Edges

BY SYDNEY B. MITCHELL

The gardener who hopes to be something more than a horticulturist is generally willing enough in his strivings to be an artist to submit himself to some principles of design and to subscribe to what is commonly accepted as good taste in the use of color. Peculiarly enough, some of our craft seem so anxious to make it difficult that they impose wholly arbitrary rules which have not even the sanction of nature. One of these is a refusal to allow annuals any part in the rock garden or in what is called the hardy herbaceous border. Many years of gardening in California might change their viewpoint. They would soon learn that the rigid distinction between annuals and perennials does not exist in all climates, for the petunias, verbenas, stocks, and California poppies are at least biennials in California, and some of them are shortlived perennials. Again, if they are now lying awake at night trying to keep a hardy herbaceous border beautiful for five months, would they stick to their determination to exclude annuals from a flower border which their visitors would expect to find attractive eleven months of the year?

So much for my apology for annuals. During the last few years while my gardening has been in central California I have tried out a large number which are certainly not very commonly grown in this country, though they are apparently more common in English gardens, and it was from the English seedsmen such as Thompson & Morgan, of Ipswich, Sutton's, of Reading, and Barr's of Covent Garden, London, that I obtained their seed. Some of the more enterprising American seedsmen offer quite a list of the less common annuals, but it is a hunt to find them. I do not propose, however, to discuss now annuals in general, but merely those of dwarf stature which can be used either to fill in gaps in the rock garden caused by the decrease of unexpectedly tender perennials or for sowing among bulbous plants to conceal fading foliage and provide continuity of interest and color. Most alpine and rock garden plants are naturally spring blooming in our gardens. Without the use of a few annuals for summer flowers it is difficult to keep the rock garden attractive as it arrives at summer and fall.

From the many dwarf and in some cases delicate and slender growing annuals I have selected about twenty-five for mention, and as they do not fall into allied groups I shall simply discuss them in alphabetical order. This brings us first to *Alonsoa Warscewiczii*, which is very much better than its name. It is a half-hardy annual, rather slow growing, with attractive small dark green leaves from which, rather late in the season, spring slender erect wiry stems, perhaps as high as eighteen inches, decorated with small flowers of a lovely salmon-scarlet, in shape like tiny single roses. It is always compact and refined in growth, never weedy. In California it is a short-lived perennial. *Alyssum maritimum nanum* Lilac Queen is less well known than the white Tom Thumb variety, and has the advantage of giving color, albeit not very pure or striking. The large flowered pimpernels from southern Europe are half-hardy annuals of spreading growth, with relatively large and bright flowers. The red variety is the Italian pimpernel, *Anagallis Monelli*, while the deep blue one is *Anagallis Phillipsi*, but don't worry over names, as some lists merely offer these by color. Both should be in sunny places. The *Arctotis* most commonly found in American gardens is *A. grandis*, too large and weedy a grower for this purpose. I hope soon to try *A. breviscapa*, only a foot high and of bright orange color, a South African half-hardy annual which also wants a sunny exposure. The Swan River Daisy, *Brachycome iberidifolia*, certainly has every claim to rock garden use, as it makes comparatively little foliage, is dainty in growth, and bears its lovely little flowers of blue, rose, or white in great abundance. Most of the annual *Calliopsis* are too rangy and vigorous for these restricted surroundings, but the dwarf variety Tiger Star, both in its growth and the form of the flowers seems appropriate. Its bronzed and yellow mottled blooms give an unusual color note among rock plants. Even more brilliant in color is the wild

wallflower, *Cheiranthus Allionii*, which will give you a bit of the brightest orange as well as delighting with its sweet wallflower smell. It is really a biennial, but flowers the first year if started early as you would snapdragons. *Cheiranthus linifolius* is of similar habit, but its flowers are of a soft mauve color, not unlike some of the aubrietias. For several years I grew *Diascia Barberae* in my California garden as a perennial, not knowing that this is generally listed as a half-hardy annual. Its flowers, of a lovely chamois rose shaped like the blossoms of *Nemesia*, are persistently produced all summer. A slightly taller and more spreading South African is *Dimorphotheca aurantiaca*, of brilliant glistening orange, opening only in the sunshine. Of it there are also available hybrids in a mixture of softer colors, chiefly creams, buffs, and salmons. The first of the Californians on our list is *Gilia tricolor*, a neat little hardy annual with pale purple flowers on nine-inch stems. *Gypsophila elegans* is quite well known, as it is grown by florists, particularly in the white variety, for mixing with other flowers. There is also a carmine rose selection. Both these hardy annuals may be kept fairly dwarf if not too well fed or too much watered. The *Leptosiphons* are dwarf indeed, their jewel-like flowers on slender stems appearing before they are six inches high. There are varieties *L. aureus* and *L. roseus*, respectively orange yellow and deep rose, as well as lilac and white forms of *L. androsaceus*. There is little to distinguish them in general character from such rock plants as the mossy saxifrages, excepting their absence of bright green permanent foliage. Mixtures of many colors are most commonly available. *Leptosyne Stillmanni* is a hardy annual from California, rather like a dwarf yellow *Calliopsis*, but flowering much more quickly from seed. I doubt if any of these unusual annuals has had anything like the admiration that the annual *Linarias* have been given in my garden. These rela-

tives of the garden snapdragons resemble them both in the shape of the plant and peculiar flower, but they are very much like wildlings in their slender growth and miniature blooms borne on slender stems about a foot in height. The garden strains are generally listed under *L. maroccana*, and mixtures running chiefly to shades of lilac pink are offered, but it is also possible to obtain separately seed of white, yellow, red and purple, and pink selections. It is, however, where the different colors have been crossed by bees that you find among the self-sown seedlings the astonishing variation of color which just about parallels the range found in the bearded irises. Carefully raised in seedflats and transplanted out a foot apart in well fertilized garden soil, each plant is capable of developing to a size which will produce dozens of spikes, but in poor or dry soil where they have sprung up thickly by themselves the plants will be relatively short and thin, but incomparably more fairylike than their wellfed brethren. I have found them very useful for sowing among spring flowering bulbs. The *Malcolmias* are very much better known by their common name of Virginian Stocks. These little hardy annuals produce quantities of white or crimson flowers a few inches from the ground, and as the red forms fade lighter one gets the effect of a multitude of little enamelled blossoms of varying shades of pink and rose. Of the *Nemesias* there are two quite distinct strains, the Suttoni type, large flowered and best suited for bedding, and the compacta strains, of which examples are Blue Gem, Fire King, Orange Prince, and the bicolor Aurora. These delightful half-hardy annuals are particularly happy in a cool garden, and, being not over nine inches high, may be used where a flower of more garden type would be unsuitable. Mixed seed is also available, but for rock garden use a single color such as Blue Gem makes a more effective patch. Another hardy annual dear to the Californian is the native *Nemo-*

phila insignis, which he calls Baby Blue-eyes. As its name suggests, it is fond of shade, and is happiest when sown in the fall to bloom in spring. It is very dwarf, practically trailing, and its blue cup-shaped flowers with white centers look right up at you. The white, purple-spotted *Nemophila atomaria* is much less attractive in color.

Because it edged a path in a picture of my iris garden published some years ago, I have had innumerable inquiries regarding the grey-leaved hardy annual with spikes of pure white flowers which was at that time called *Omphalodes linifolia* but which is now sometimes listed as *Cynoglossum linifolia*. You may also find it listed under the name Venus's Navelwort, a term derived from the shape of the seed. It is a lovely thing, and though it goes to seed rather quickly is well worth growing for itself or among bulbs, never getting rank or weedy. If there is a more beautiful blue annual suitable for rock gardens than the Californian *Phacelia campanularia*, I have yet to meet it. It is a brilliant deep shade sometimes referred to as Madonna blue. In distinct color contrast to this is the little relative of the poppies which in its native State of California bears the name Cream Cups. The botanists call it *Platystemon californicus*. The hairy leaves are almost on the ground, it is so dwarf, and the pale flowers rise only a few inches from the center of the tuft. Far more rampant and bolder in its deep rose color is the hardy annual *Saponaria calabrica*. *Sedum caeruleum* I must confess I have not yet grown, but I have had such reports of it that it is going on my next list for trial. A hardy annual with small blue flowers which can be used for carpeting rather dry pockets of small dormant bulbs can not be neglected. If another dwarf salmon-pink, red, or rosy purple filler is required, the annual *Silene pendula*, only six inches high, is worthy of consideration.

Very different to the above is *Tagetes signata pumila*, a very dwarf and small marigold which I first saw at the

Panama-Pacific Exposition at San Francisco in 1915. *Venidium calendulaceum* is another of the dwarf showy orange annuals from South Africa. For the first time this year I have seen it in an American catalogue. Last on this list comes the *Viscaria*, an annual member of the *Dianthus* family, of very slender grasslike growth and small flowers, ranging from those of bluish and rosy purple shades to carmine and blood red.

The list I have given does not exhaust the small annuals available, but I have assumed that most gardeners know the dwarf morning-glory, *Convolvulus minor*, the miniature forms of nasturtiums, the dwarf annual candytufts, Chinese and Indian pinks, lobelias, portulacas, dwarf verbenas, and the forms of *Viola cornuta*. There is even a very small form of the California poppy, recently selected.

As my experiments with dwarf annuals have been almost altogether in my California garden, I can only say that, for the most part, the best success

with them there has been from fall sowing where they are to bloom, this being the natural way in which California annuals germinate and grow. Where the climate will permit of fall sowing of hardy annuals, this should be tried, but of course with the half-hardy annuals and in gardens where fall sowing is unsuccessful there remains the possibility of starting the seed in frames or of sowing in the open ground as early in spring as this is safe. After they have germinated and are well under way it is highly undesirable to water or feed the plants very much. It will doubtless have been noted that most of the annuals mentioned are from California, South Africa, or the Mediterranean region, where germination takes place during the rainy season and towards its close the annuals bloom. After the long dry season sets in they ripen their seeds and scatter them for the next year. Of course, some attention to watering and removal of seed-pods will extend the blooming season.

A dainty and handsome lily that bids fair to rival the old time tiger for garden popularity is Miss Willmott's lily, *Lilium Willmottiae*. It is as easy to raise from seed as any of the garden perennials and blooms the second year with reasonably good culture and soil, being much more certain to produce bloom its second season than *L. regale*. It is a miniature tiger in coloring but a much more graceful and airy plant. It does not seem to be as fussy about its fare and situation as many of the other lilies.

In many of our large cities or in their suburbs there are display gardens of May flowering tulips. They are well worth visiting and studying with a view to selecting varieties for the fall order. Some of the newer varieties worth noting are a handsome pink Darwin, Chant de Cygne. After-

glow is another handsome break in the Darwin class, showing yellow coloring. Old Times is a fine breeder of blended coloring. Scarlet Emperor which has come into catalogues only in recent years is one of the most gorgeous reds on the list.

A handsome form of the South African daisy, *Dimorphotheca*, comes to us to add a new white daisy to the list of handsome cut-flower material. This is *D. Ecklonis*, white with blue trimmings, somewhat suggestive of some forms of arctotis. The dimorphothecas in their varying shades of burnt orange are becoming more popular as acquaintance increases. A friend of mine calls them "patent leather" daisies because of their glossy texture.

The History of the Pleas Peonies

BY SARAH A. PLEAS

PART ONE

This part, with some omissions, is reprinted from a former issue of the magazine in order that the present membership may have the complete paper in one issue.—Ed.

"Our deeds shall follow us from afar."

Although I was highly pleased to receive a request from Secretary Traub to write a brief history of the Pleas peonies, I was reluctant to undertake the task, for it would have been far easier to have written a book than a magazine article. The history of Elwood Pleas (syn. Lost Treasure), or Nellie Pleas (Syn. Multiflora) could easily take up the space of an entire article even if all thrills, all frills and remarks were omitted. The request is equivalent to being asked to relate, at the breakfast table, the long sweet romance of my second youth occupied in raising these floral children. Under the limitations, I have done my best, and I herewith greet my old and new friends, the Fellows of the National Horticultural Society, without further apology. No greater honor could have come to me than a request to write this history of how my peonies were raised, their parentage, names and synonyms, my estimate as to favorites together with such other facts that will interest the Fellows of the Society.

I am often asked which of all my treasures—all so beautiful, and many nearly alike—are my favorites. It is no longer a secret that I christened my favorite Elwood Pleas, the name I loved best. By whatever name a child is called, that name becomes endeared to the fond mother. Likewise, a peony which has received the name of a dear one becomes doubly a subject for admiration and attachment. I strongly urge every peony enthusiast, who has the space, to plant a few seeds without

expecting a prize winner. In this way you may have the pleasure of growing and naming a few floral children of your own that will not voluntarily ever leave your home, but may in time be freely given to your friends to brighten their homes also. I have named more than 100 peonies, every one a credit to its type, but so many were so nearly alike that the largest and best only were offered to florists. Most others were given to friends, or sold to those who came to admire them.

Labels are short lived, and names not of interest to others are soon forgotten. Fortunately, my annual record of sales, including the name, number and date have been preserved. These are now my source for such names as have been long forgotten. Naturally, when these records are now gone over, I am able to recall the location of the plants in the garden, the character of bloom—double, single or Japanese. Since this history is not written primarily for the commercial grower, but is to be an intimate record for the amateur and a contribution to garden lore, I have spent many days in overhauling old records searching out data that may not have any immediate value in dollars and cents. In the long run, however, the enthusiasm of the amateur will become the basis of the demand for the products of the commercial grower.

Having recently written, by request for horticultural magazines, full details for stratifying and planting peony seed, together with cultural directions, and knowing that those interested in growing peonies may find additional information on this subject in trade catalogs, I shall not repeat such details here.

In 1855, I first saw a peony plant bearing seeds. I at once suggested to the florist, whom I considered a

cyclopedia, that it might be interesting to plant these. I was at once assured that they would "all come up single, small, of poor color and of no value." This put a damper on my enthusiasm for many years. I noticed little seedlings near the Queen, but these were merely tolerated much as volunteer perennials are, until they must give way to better plants. Some of these chance seedlings came up among rose bushes and other larger plants where they escaped the hoe. These slowly gained in size, but with the garden full of really beautiful things they were of no particular interest to me for the time being. While strolling leisurely adown the walk with little Nellie, a bloom half-concealed was seen among the bushes. My surprise and delight were so manifest that Nellie, with the winsome assurance of the household pet, exultantly reached out her dimpled hand, gleefully exclaiming, "Nellie's pitty flower," thus unconsciously christening, whilst receiving it, the Nellie Pleas. By whatever synonyms it may be burdened with hereafter, it will be known in my home only as Nellie Pleas. When removed to a bed cut in the sod on the lawn, it developed the largest blooms borne in the largest clusters I have ever known. The first division was sold to J. T. Lovett for \$25.00 with exclusive right to sell it. Susanna, of a more pronounced shade of pink, full double, soon made its debut. Lurena and Virginia G. Cory, which bloomed a year or two later, were good double blooms. These were sold and listed by H. A. Terry. Ernest L. Pleas, a full double, deep rose, unique in having many petals edged with bright crimson, was sold for \$40.00 and never heard from again.

Nellie Pleas and her royal sisters appeared upon the scene many years before I began to plant seeds. The Queen should be considered the mother of these, as well as the later originations. The Queen, with its great clusters of golden-hearted blooms, was not hybridized since its blooms opened be-

fore any other peony in my garden. This may account for the fact that all the offspring produce flowers in clusters, and many bloom early. Many of the originations were much larger and far more beautiful than the parent. I had great confidence in the constancy of heredity, and I decided that in planting peony seeds the Queen should be the chosen parent. On account of insufficient room, I made the mistake of planting the seeds too thickly, which made it necessary to engage in constant thinning and replanting as long as I remained in my Indiana home, "The Pleasance." When seedlings are given sufficient room they reach the blooming stage sooner, and will increase rapidly as a rule. A far greater mistake was committed in stratifying the seeds in the open ground in the full sun. This required that the seeds be planted very early in the spring. A late frost came along and killed every seedling peeping above the ground. Had the freeze come a few days earlier, probably few or none would have been above the ground to be cut down by the frost. A still later frost might have caught and killed practically all the seedlings—"On what slender threads hang everlasting things." After the cold wave had passed, with the first warm days, the tardy ones came up, totaling less than 1,200 in all. Out of this comparatively small number of seedlings came every type, form and color yet produced from White Swan to Opal and Jubilee; from Wild Rose to Lady Iris and Elwood Pleas; from Redbird to Gem and Gypsy Queen, Black Beauty, and Black Prince; from Altar Candles to Dr. Pleas and Novelty; and the large family of the most aristocratic little Japs filling the garden with their sweet fragrance. Admitting that there are good, better and best peonies, there is no one who will deny that any of these peonies growing wild would have thrilled the heart of a Burbank or a John Burroughs as never before. Why then should the majority be disturbed even if the seedlings are not all prize winners?

We turn now to the story of Nellie Pleas, synonyms Multiflora, Admiral Dewey, General Lawton. Noticing that Nellie Pleas was listed by Mr. Lovett at 50 cents, I bought it with others to restore my right to sell the same. When these bloomed, "Nellie Pleas" was late, small, with no resemblance to my production, except a similar color. Since I had ordered and paid for Nellie Pleas, I was entitled to sell it, but if this undesirable variety was being disseminated as the true variety, I did not wish to offer my variety by the same name. Multiflora appeared to me a very descriptive name, and attractive to patrons, and I unhesitatingly offered it under that name without a thought of ever being called to confession for so doing. It never appeared to me that it might make trouble for florists. Cutting a large clump into six divisions, two were left in the garden, the others were planted on the lawn with other divisions, 18 inches apart. There they remained, receiving no care, until they became a compact hedge of blooms so crowded that all had not room to open. They attracted the admiration of all who saw them. Persons on the highway stopped to gaze at the floral display. I realized that these plants would be greatly benefitted by division and replanting. Having duplicates of all, I decided to sell those on the lawn so as to give me room to thin out and transplant from the garden where the peonies were equally crowded. Before offering Multiflora, I must know approximately how many divisions the four clumps would make. Each clump was found to have from 30 to 35 bloom stems. Each stem averaged 8 to 10 blooms, the largest measuring 7 to 9 inches with not a stamen showing. The petals of the smaller blooms were beautifully intermingled with golden stamens depending upon the size of the bloom, greatly enhancing their attractiveness. These were offered to a florist. I described them as best I could. I admitted that they were not of as delicate a color as others, but that the blooms were

earlier, larger and silkier than any other peony borne in large clusters, and that their habit of bearing flowers in clusters enabled them to bloom for four weeks. My offer was accepted. When the plants were dug and the tips removed, the difficult task of cutting the divisions had to be met. In making up the order, one extra was given with each dozen. Before all were dug, I feared that the stock would run short on account of the large divisions and the extras. To make up the number ordered, I substituted from an unnamed plant which I labeled Admiral Dewey, with the hope that this popular name would attract patrons, and without a thought that this substitution would interest or affect any one else—"O wad some power the giftie gie us, to see ourselves as ithers see us, it wad from many a blunder frae us, and foolish notion." I explained my dilemma to my patron, mentioning the possible substitution. I am of the opinion that the unnamed variety above referred to as Admiral Dewey is the only genuine General Lawton.

PART TWO

The writer being called from home when the peonies were in bloom in 1896, my husband being in delicate health, remaining at home, staked and labeled each with number, color and name of any as they came into bloom, recording "444 as the best." When filling Mr. Harison's order in September for three pounds of seed Wild Rose, Whitecap, Dr. Edgar Pleas and Ostrich Plume, 50 divisions of the best kinds that had yet bloomed, were each labeled same as the plants from which it was taken, No. 444 being small, but one eye with a 3-inch root was sent. When labeled, fearing it might be overlooked, wrapping it elaborately, it was labeled 444; when received Mr. Harison writes, "The labels are so badly mildewed most of them are illegible, it will require great care to straighten things out." Although he had seen prize winners at the Peony Shows in

Boston, Massachusetts, and was already stocked up by Mr. Rosenfield with "the best kinds on the market," he was very enthusiastic over these, writing me of their "glorious blooms," the first season. With the second blooming he became profuse with classic eulogy of the peony when writing to the Chicago Florists Weekly Review, as the most laudable of all hardy garden flowers, incidentally remarking, "Mrs. Sarah A. Pleas of Dunreith, Indiana, is listing 200 kinds." This letter proved a far better inducement than all I had personally written to every florist I could find the address of, in my unsuccessful effort to dispose of some of my surplus divisions.

Within a fortnight I had gone to my winter home in Florida and letters were being forwarded to me from Dunreith from florists who otherwise could not have known of my plants, as well as from most of those to whom I had appealed, every one requesting my price list, each interested only in the best. Mr. C. W. Ward accepted nearly \$500 worth with his first order, and all listed it later, when I admitted having "named my best, largest, seashell pink for my late husband, who had admired it most, yet so small I am unwilling to divide; yet I believe it should be put on the market. If you wish to test it, and will pay a fancy price for a piece so small that it will not check its blooming, I will send you a one-eye division." Mr. Ward replied, "If I get it I will wish to put it on the market as soon as possible. * * *

I will pay you \$150 for the entire plant and allow you to keep off one good strong plant, if you will agree not to sell or allow any part of it to leave your garden. I will pay you \$100 down and the balance any time you will send it to me. * * *" Although I prized it more highly than all others, knowing a "good strong plant" would double its size annually and soon be as large, I could not decline his generous offer, the more especially as I was equally anxious to put it on the market as soon as possible.

I at once wrote Mr. Harison, explaining that I wished to sell but could not, unless he would return all the 444 to my safe keeping or agree to hold it till released. He replied, "I will hold it if I know which it is and I think I do." Now accepting Mr. Ward's offer, on lifting the entire plant, one of the 7 stems was removed with a fine root leaving but an inch scar. This being set back as usual had two bloom stalks in the spring each with its six typical blooms as if never disturbed. I was not surprised not seeing it listed the first year, but after the second blooming, becoming impatient to hear his rhapsody over it, I eagerly inquired why he was not listing it. With neither complaint nor apology he simply replied, "It is not so fine as I had hoped, and I do not care to list it," thus deliberately breaking my cherished idol, as well as my fondest hopes, leaving me no redress.

The late J. M. Good was the first florist to accept one dozen on trial, "If I was willing to give out the secret of increasing and growing them successfully." He proved a very apt student; I shall always cherish his memory as a Floral Friend. Meanwhile, having sold my small supply of such divisions as had bloomed best, Mr. Harison, with his additional selected stock, with all his enthusiasm, had sold \$20 worth of Walter Morgan, transmitting me \$10. The five years having elapsed, Mr. Harison writes, "I am now ready to send half the peonies to you."

Since that was no part of the bargain, I wrote him I was far more crowded than when sending them. Copying his voluntary contract, mailing him the original, he at once replied, making no allusion to having reduced the number of Walter Morgan: "I will make you a give or take offer. I will keep all the Walter Morgan and send you all the 444, and will give or take \$100 for the balance." This offer being gladly accepted, I soon received the post-office money order with the finest peony roots I have ever seen.

They would easily have made 100 one-eye divisions. Not having room for so many they were cut into 16 uniform divisions and set in old fence row, where one dozen of Hollis best were already growing as near the wire fence as one would wish them.

Dissatisfied with Mr. Ward's report and with Mr. Harison's utter failure to recognize the merits of Elwood Pleas, still uncertain of the identity of those from Nebraska, I resolved to appeal to a higher tribunal by sending one to the "Trial Grounds" at Ithaca and have it officially described and rated. Mr. Ward being president of the society, fearing its recognition might prejudice the judges, I labeled it Lost Treasure, with no thought of its being sold * * * with their rapid increase when given room, they became more crowded annually, necessitating division and replanting. Now, having a great surplus, with no market for the equally pretty single, semi-double, and the dainty little Japs, I gave these freely to my friends so long as they had room for them. I now persuaded them to join with me in utilizing such as are destroyed by most growers, by planting them as ornamental borders and hedges, between yard and garden, between lawn and meadow, along the car track, from street to garage, along the railroad, the public highway, supplanting weeds in all fence corners, inside and out, since no stock will eat them, and when once established they remain as long as permitted; and seeding freely, I here predict that from this example the time will come when their seedlings scattered along the highways will gladden the weary traveler with as fine kinds as are now left in the garden at The Pleasance.

Now having a large surplus of Elwood Pleas, dearly as I have become attached to the original, I can well spare it to Mr. Ward and set one of these in its place. Having two sons living in Florida, with a good renter and his wife in my spare rooms, I have enjoyed spending the six cold months

in that salubrious climate annually. So long as I am in the home all goes on like clock work. No longer having fences around garden, lawn, or the public highway, with all kinds of stock, is sufficient excuse for my writing to Mr. Ward, "The Elwood Pleas is unsurpassed, simply perfect; its 26 stems gave a total of 146 immense blooms with never 1 stamen. You are losing much pleasure and time delaying its division. I anticipate spending the winter months in Florida with my sons and leaving all kinds of stock in care of renters, with no fence around garden or lawn. It seems like tempting the fates not to secure its safety by sending it to you before leaving.

My timely reply was courteously brief. " * * * Not listing it, I have all the stock I shall need. * * * I am on the eve of starting to Europe on one of my frequent collecting expeditions in search of new rare plants for my patrons." This being no part of *my* program was a great surprise. Allowing time for him to get safely en route, copying his voluntary contract verbatim, retaining the copy, I wrote practically a duplicate letter of my first, addressing it to his foreman left in charge, offering to ship at once. I received a \$50 money order with thanks by return mail. I lost no time in shipping this King of Peonies and the pride of my garden to its unknown destiny, when I, too, was soon on my way to the Land of Sunshine and the Longleaf Pine. Seeing Lost Treasure for sale as an additional variety, I lost no time in writing to the secretary of the society, explaining the situation, requesting they should adhere to their own "ruling that all peonies shall hereafter be listed only by the name first sold by," and since Elwood Pleas had been sold to Mr. Ward only for \$150, I desired the restoration of its name. This he readily accorded and so published in his bulletin. "My heart shall reap what it has sown. Nor near nor far, nor high nor deep, shall keep my own away from me." Having given Mr. Ward, my benefactor, time to recover

his normal courtesy, not yet having liberty to dispose of any part of my surplus from Nebraska, and since "he did not care to list it," my *local* sales would in *no way* affect him, writing full explanation of the transaction to C. S. Harison, I appealed to him to be permitted to sell these plants from Nebraska, to which he graciously accorded without demur, and I shall always honor the memory of my floral friend, C. W. Ward.

The following brief extracts from Mr. Harison's letters, covering several years, will explain some of the difficulties encountered by the amateur; and how they may be avoided. These being but 50 out of the 1200, since he never bought others, except to repeatedly order all the White Cap, Dr. Edgar Pleas, and Ostrich Plume I could spare. Having listed him Golden Wedding, he writes, "I believe I know Golden Wedding. I am calling the best yellow that. It is the best yellow I have ever seen." I twice bought Golden Wedding and Walter Morgan of him to be sure which of my blooms he was calling by these names, but was never able to duplicate them in my garden. Since he prized Shabona so highly I asked, "Why so ugly a name?" He replied, "I'm naming the darkest for Indian chiefs. Shabona is the tallest among our 400, a chief among all others." Having but Gem, a brilliant red, and Gypsy Queen, a deep garnet, each equally tall, that could by any stretch of the imagination be Shabona, I desire to know which, if either, it could be, but was never able to find out, fearing to weary Mr. Harison sus-

pecting it may be Gem unless I have given it away before it bloomed. "Walter Morgan was in full bloom on the day of that young man's funeral. All visitors thinking it the prettiest one of all, we decided to name it for him, when every one present commemorated the day by leaving an order for the plant." * * * "The one you call Dr. Pleas is very fragrant, a glorious peony, its petals white and gold, the older plants sport white plumes on the curved golden petals. It is first class." And inquiry later, "If I know Elwood Pleas, No. 444, and I think I do, it has never yet had a bloom worth anything. Gen. Lawton from Peterson has no bloom. There are some very good ones, and some I shall mark 0, but the others will more than make up for it. My sales have been heavy, nearly \$2,000, this fall. No. 90 is splendid, there is something in it. One I call Maiden has single blooms, with heliotrope fragrance, petals satiny, pink edged white, with heart of gold. Dainty is semi-double, the only really variegated peony I ever saw, petals pink striped yellow in the center around the stamens. This is entirely unique and sweetly beautiful. Many come to admire it." (This is the one I called Golden Wedding and killed by over-feeding.) "Another year I shall have something worth while to show. I have many hundred blooms from spring planting of these." Sincerely, C. H. Harison. (Since no one but Mr. Harison listed Shabona, it was thought to be his peony; instead, it is a mate to Elwood Pleas.

PART THREE

*Complete List of Peonies Originated by Mrs. Sarah A. Pleas**

Airy Fairy Lilian. A sweet little Jap., pink guards, petaloids white, thread-like of uneven length. 6.9.

Alpha and Omega. Japanese. 6.7.

Altar Candles. Clusters of dainty waxen candles ablaze without extinguishing. Anna C. Griffin. Loosely double pure white, revealing a few golden stamens. 7.8.

*Figures in italics, ratings of American Peony Society; others by Mrs. Pleas.

- Anna Louise. Full double white, having pink guards, with all petals narrow. 8.0.
- Anna Teas. Full double snow white with calendula shaped, rounded petals. 7.9.
- Aurora. So called because of its varied similar colors, a charming flower. 6.9.
- Benj. S. Parker. No darker bright red, full double, named for the Indian poet laureate. 7.9.
- Black Beauty. A good semi-double bloom, darkest one ever known. 5.0.
- Black Prince. Semi-double, fimbriated petals, appropriately named. 5.0.
- Bouquet de Flora. Deep rose, light center, largest pointed buds, no two alike, semi-double, 7 blooms in cluster. 6.9.
- Buttercups. Semi-double Japanese, very fragrant, name descriptive. 5.9.
- Caroline. A very odd, loosely double, lightish rosy pink. 6.5.
- Charles Earl Pleas. Full double, loose petals, large clusters, good size, sturdy stem. 7.0.
- Clustered Rose. Semi-double deep rose, or light red, with golden stamens. 6.0.
- Crimson Cluster. Loosely double, clusters of brightest crimson, blooms small. 7.6.
- Damask Rose. Rose type, size and color of the Damask rose of our grandmothers. 8.0.
- Deborah Teas. No better full double pure white, not as large as some, good clusters. 7.9.
- Dolly Teas. This is one of the many fragrant little Japs, reminding me of Dolly. 6.0.
- Dr. Edgar Pleas. Syn. White Cap. My favorite of all the fragrant Japs, guards pink, center canary, fading white. 6.8.
- Editha. Full double, Prince Albert rose color, no stamens, one of the first named. 6.0.
- Elviretta. An odd mixture of silvery rose petals intermingled with stamens. 6.0.
- Elwood Pleas. Syn. Lost Treasure. Cluster of 6 to 9 largest size, shell pink, no better annual bloomer. 7.8—8.7.
- Emily Griffin. One among the daintest lovely doubles, light pink with stamens showing. 7.9.
- Emily Virginia. Medium size lovely double tricolor, rosy pink, canary and white. 7.0.
- Emogene. Medium size, loosely double, pink with stamens intermingled. 5.9.
- Ernest L. Pleas. Full double deep rose, some petals with a crimson thread. 6.9.
- Eva Coffin. No prettier, daintier, pinkish single white, demanding this name. 7.9.
- E. Y. Teas. I thought grand because of its oddity, but E. Y. left it for me to abandon. 6.9.
- Fair Acres. Large, full double, pearled rose, named by W. W. Willen of Indianapolis for his park given to the city. 5.0.
- Fairy Frills. This was a fair duplicate to Jubilee, except all petals were fimbriated. 6.0.
- Full Moon. One of the best, largest single whites, with best golden cushion. 7.9.
- Gem (The Gem). The brightest, best of the full double red Pleas peonies, and the tallest. 8.5.
- Gen. Lawton. Syn. Nellie Pleas, Multiflora. A misnomer, with best point the color. Should be left out. 7.9.
- Golden Nugget. The deepest orange, tricolor, very fragrant little Jap. 7.8.
- Golden Treasure. Full double, guards pink, narrow petals gold banded, fimbriated, tightly coiled globe.

- Golden Wedding. Full double bright canary, said by Harison to be "as yet the best yellow." 5.9.
- Gypsy Queen. The tallest, most double, color of garnet, small clusters of but four blooms. 8.5.
- Helen's Babies. Full double, dainty pink, blooming in couples. 8.9.
- Ida Pleas. Large, clustered, delicate pink single, speckled with bright rose. 6.0.
- Indiana. Large full double rosy pink, well worth the name given. 9.0.
- Isabella. Full double white, fragrant, no one prettier or more dainty. Not one stamen. 8.9.
- Ivanhoe. Syn.? T. B. Terry. Never could tell the color, full double, no stamens, one of my best doubles. 8.9.
- Joseph C. Teas. The tallest, the smallest, the brightest and most sure to please. 7.8.
- Joseph Griffin. Tall double rosy pink as fitting the Quaker Lady as the oak the clinging vine. 7.8.
- Jubilee. Syn. Lost Treasure. Full double white, won highest honor where La Cygne with 20,000 best from all the country were shown. 8.9.
- King Edward. Full double, globular, compact, creamy pink flecked crimson. 8.0.
- Lady Iris. Syn. Iris Pleas. Light rose, a favorite foundling, no stamens. 7.9.
- Lady Emily. Loosely double, a lovely mixture of rosy pink white with shades of canary. 8.9.
- Last Rose of Summer. A very beautiful bright full double rose, last to open its bloom. 8.9.
- Laura E. Pleas. Loosely double broad petals, bright midrib, broadly margined white. No one is prettier from all sides. 9.0.
- Laura Ward. Semi-double silvery rose pink, beautifully intermingled with stamens. 6.9.
- Lillie C. Pleas. Jap. One of the sweetest where all are sweet, guards pink, center canary. 7.9.
- Little Aristocrat. The earliest of all the full double, snow white, very small, clustered. 8.0.
- Little Nell. The daintiest in size and color, pinkish guards, petals narrow canary, fading white, Jap. 7.0.
- Louese. Loosely double, white, pink guards, very many stamens beautifully intermingled. 7.9.
- Lurena. Loosely double cerise, a twin sister to Nellie Pleas, lacking the earliness. 7.9.
- Madam Pleas. Crown type, the aristocrat of the peony garden, lilac, flesh, rose, yellow and white. 6.6.
- Maiden Lady. Very delicate single pink, named by her. Large cluster. 5.9.
- Mary. Guards broad, largest in bud, giving the central ball a saucer for its dainty clear pink bloom. 9.0.
- Mary B. Becket. Semi-double, guards deep rose, petaloids silvery pink, stamens intermingled. 7.4.
- Mary B. Clark. The fairest of the fair pink Japs., yellow stamens fading white. 7.8.
- Mary Evans. Small rose type of marvellous beauty, compact globular blooms. 6.9.
- Mary Jane. Full double, the smallest peony to bloom, clusters of bright rose. 7.9.
- Mattie Charles. Lovely, loosely double, cerise intermingled with stamens. 5.9.
- Midsummer Night's Dream. Full double ivory white, center pale yellow primrose color. 8.9.

- Minnehaha. The brightest and latest single peony with good golden cushion. 6.0.
- Minnie Pleas. Rose type. One of the earliest and prettiest, rosy pink. 8.0.
- Miss Lucy. One day later, a trifle deeper shade, equally large and pretty. (Comparison to Minnie Pleas.—Ed.) 8.0.
- Mrs. Barrett. Semi-rose, guards deep rose, petaloids silvery rose, stamens beautifully intermingled. 6.0.
- Mrs. Cook. Semi-rose, guards bright rose, crowned with canary fading white. 6.0.
- Multiflora. Syn. Nellie Pleas. Largest size loosely double, earliest silvery pink, 7 to 13 blooms, largest in bloom. 7.4.
- Nettie Elliott. A rather large Jap. of typical color and fragrance. 7.9.
- Nosegay. Another sweet little Jap., guards pink, petals narrow creamy fading to white. 6.0.
- Novelty. Very early, rose, pink, white and cream, very fragrant, long in bloom. 7.0.
- Opal. Syn. Jewel. Full double, strong upright stems, large clusters of opalescent pink, no stamens. 8.7.
- Ostrich Plume. Pink guards, bright canary petals, tipped, curved snow white plumes. 8.0.
- Orange Prince. The deepest orange color, intermingled with rose and yellow stamens, Jap. 6.0.
- Orpha. Full double light pink, fragrant strong upright grower. 6.0.
- Passiflora. A Jap. that any one will see resembles the passiflora in form and color. 7.9.
- Pearled Rose. Loosely double, bright rose broadly pearled pure white. 7.5.
- Pleas' Favorite. Very fragrant little Jap., guards rosy, petals threadlike. 7.0.
- Pleas' Perfection. Rose type, blush white intermingled with golden stamens. 7.9.
- Pleas' Pride of Dunreith. Semi-rose type, stems strong upright, rosy pink, very floriferous. 7.0.
- Pleas' Queen. Single white with dark carpels, having broad red lips, clusters 7 to 13 on a stem. 6.0.
- Pleas' Surprise. Clusters of creamy rose blooms. 7.0.
- Pleasii. Large loosely double, very light pink representing the ideal Pleas peony. 8.9.
- Pocahontas. Large bright cerise, single, large golden cushion, good clusters. 6.8.
- Pres. McKinley. Rose type, very strong, upright, beautiful deep pink, darker base. 7.8.
- Pres. Roosevelt. Very large sturdy stems, very upright, full double, deep rose edged crimson. 7.6.
- Quaker Lady. Syn. Rebecca Griffin. Rose type, the cleanest possible white suffused with lake, lovely. 8.9.
- Queen Alexandra. Rose type, globular, graceful clusters of creamy white blooms. 7.9.
- Queen of Pleasance. Anemone type, long pointed buds, guards bright rose, center salmon fading white. 6.3.
- Ragged Robin. Single dark red, petaloids deeply fimbriated, very distinct. 5.0.
- Ralph. Flowers finest light pink, measuring 9 to 9½ inches, late, rather flat, rose type. 7.6.
- Rebecca Joie. No more dainty loosely double, white tinted crimson, a beauty. 7.9.
- Red Bird. Very large semi-double, red with unusual size golden cushion. 5.9.
- Red Ridinghood. Loosely double deep red, with golden stamens intermingled. 6.5.

- Robert J. Pleas. The brightest deep single red in my collection, fine golden center. 7.0.
- Rosalind. Single good stem, very floriferous, delicate pink, large golden cushion. 7.9.
- Sarah. Loosely double, blush white, very pretty, the only one having ruffled foliage. 8.2.
- Sarah A. Pleas. Delicate pink guards, fimbriated and unique, crumpled, white yellow stripes. 9.0.
- Seven Sisters. Small, loosely double, light pink, intermingled with stamens, clusters of seven. 6.0.
- Shabona. Developed by Mr. Harison. Named for an Indian chief, among my best. Four feet. 6.8.
- Solingus. My one tree peony, a marvel of delicate fimbriated petals and petaloids. My final creation.
- Spiceland's Queen. Semi-rose silvery pink, strong upright, large clusters, elegant. 7.9.
- Sudie Baily. Full double, large solid ball of rosy pink. Selected to name. 7.9.
- Sunbeam. Semi-double, early, shades of rosy pink, creamy white with yellow stamens. 7.0.
- Sunrise. A descriptive name, bright rose, yellowish, impossible to describe. 6.9.
- Surpasse Humei. Large full double. Early, surpassing Humei, in more pleasing color. 8.0.
- Susanna. Rose type, very pretty, silvery pink, large clustered blooms, no stamens. 8.0.
- T. B. Terry. Rose type, loosely double with large broad petals, shining satiny creamy white. 8.8.
- Tricolor. Rose, with distinct shades of red and cerise pink, with stamens. 6.9.
- Walter Morgan. Rose type, guards pink, center canary. Mr. Harison's favorite. 8.0.
- Water Lily. Large single, pure white, a charming prototype of the Waterlily. 6.9.
- White Swan. Single snow white, carpels light shiny green broadly tipped white, nestled in a yellow cushion. 8.0.
- Wild Rose. The largest, 9½-inch bloom, with three-inch golden cushion concealing the stamens, a prize winner. 7.7.
- Yellow Rose. A little Jap. as sweet and pretty as the genuine yellow rose. 6.8.

(In addition to the article, Mrs. Pleas gives two lists of varieties of her origins which she calls "The Jubilee Collection" and "The Jubilee Collection of Clustered Peonies," respectively. As their ratings and descriptions appear elsewhere, only the names are given here.—Ed.)

THE JUBILEE COLLECTION

Elwood Pleas	Rosy Dawn
Anna Teas	Sarah
Charles Earl Pleas	Gem
Isabella	Golden Wedding
Jubilee	Quaker Lady
Lady Emily	Wild Rose
Lady Iris	White Swan
Mary	Lillie C. Pleas
Midsummer Night's Dream	Novelty
Madam Pleas	Altar Candles

Opal
Opal Iris
Ralph

Dr. Edgar Pleas
Joseph Griffin
Nellie Pleas

(The above, with the exception of Anna Teas and Golden Wedding, Mrs. Pleas would select the remainder, "if they excluded every other peony equally pretty."—Ed.)

THE JUBILEE COLLECTION OF CLUSTERED PEONIES

Altar Candles
Anna Teas
C. E. Pleas
Dr. Edgar Pleas
Elwood Pleas
Gem
Gypsy Queen
Isabella
Jubilee
Last Rose of Summer
Lady Emily
Laura E. Pleas
Mary
Madam Pleas

Midsummer Night's Dream.
Nellie Pleas
Novelty
Opal
Quaker Lady
Queen of Pleasance
Ralph
Sarah
Susanna
Rosy Dawn
White Swan
Wild Rose
Solingus

(This group, which differs very little from the other, was chosen by the author to give her favorites among the clustered type, i. e., the stalk in which the terminal flower is surrounded by the lateral blooms which open at the same time.—Ed.)

Orchid Growing in Colorado

By WILLIAM BART BERGER.

In the March, 1927, number of *The Orchid Review*, London, there is a very interesting article by B. N. Ghose of Darjeeling, India, on the effect of sunlight on orchids. In this article he points out that the intensity of light is greater in the Torrid Zone because the sun's rays come more vertically through the atmosphere than they do at higher latitudes.

Perhaps there may be some connection between this and the fact that we are beginning to believe here in Colorado that we have a splendid place for the successful greenhouse

culture of orchids. For our atmosphere is so clear that we approach closer to the brilliant light that the more direct vertical rays of the tropics produces. This enables us to give our orchids a great abundance of light, and we believe, in consequence, we get a healthier growth and a greater inflorescence. A short time ago a representative of one of the great English firms of orchid growers was here and expressed great astonishment at a plant of a certain hybrid variety bearing three fine blooms, for in England it had not been known to

have ever borne more than one bloom at a time. In fact, our trouble is not that we can not give enough light, but that we do not give too much. This of course does not worry the professional grower so much, for he is always on hand to adjust the shades; but it is indeed a problem to the amateur who does his own growing, to which class the writer belongs.

With our advantage in the many sunshiny days and clear atmosphere comes what at first seemed a great disadvantage. For our atmosphere is appreciably drier and orchids certainly do not like this, and they must have a certain humidity. But this handicap is proving to have its good points too. For some years Colorado grown greenhouse plants and flowers have been shipped to further and further points and in increasing quantities, and have found a ready market largely because of their remarkable keeping qualities. Colorado grown orchid blooms shipped to Chicago actually last longer before fading than those grown in the immediate vicinity. Perhaps the reason for this is just because, being grown in our high, drier air, when they reach a more humid atmosphere, it gives them a new life.

I had a very interesting object lesson in this at the time of the first American Orchid Society show in Boston. Two plants had bloomed in my orchid house several days before the time came to leave Denver for Boston. It seemed foolish to try to take them on the long railroad journey and expect them to make any showing at all. But thinking there was no harm in trying, we took them with us, and to our astonishment, as we left the dry air of Colorado and traveled eastward, instead of fading they stayed as fresh as ever; and when they got to Boston, where it had been raining for a week, they actually seemed to get fresher, and at the end of a four-day show were less faded than the blooms on their neighboring plants which had only come a few miles.

Another very similar experience was

that of one of our dealers here who took two hundred carnation blooms to a Boston show and placed them in vases on the exhibit tables, where, as he says, "they seemed to just drink in the moisture from the atmosphere and looked after two days' time as though they were going to last indefinitely, and only six out of the whole two hundred had gone to sleep."

But while these instances may prove we have very good blooms when we get them, still we must have humidity to grow them and this means a constant struggle to keep our orchid houses damp. This, like the shading, isn't so bad for the professional grower who can damp down the floors and staging as many times during the day as he wishes; but for the poor amateur who has other things to attend to it means all sorts of devices to produce humidity. For years I could not get my *Cypripediums* to amount to anything. Finally I built a sort of fountain which has a constant thin sheet of water on the brick walls of the structure and is filled with saturated coke. On a staging over this the *Cypripediums* were placed and now they flourish and bloom.

Our elevation, a mile above sea level, may have its effects. Undoubtedly *Cattleyas* and *Laelias*, whose native habitat is at somewhat the same or higher elevation, are easier to handle than the *Oncidiums*, *Phalaenopsis* and other species growing nearer sea level. This does not hold true, however, for the *Odontoglossums*; for even although they grow naturally at much higher elevations than this, they are of all kinds the most difficult for us to handle, probably because no matter how hard one tries, it is impossible to keep the house cool and moist enough on a hot, dry summer day.

Taken altogether, our conditions make the growing of orchids here a most interesting problem, and perhaps even a more fascinating pursuit than it is when carried on in possibly more favored localities.

THE NATIONAL HORTICULTURAL MAGAZINE

Issued quarterly by The American Horticultural Society, a Union of The National Horticultural Society and The American Horticultural Society, at Washington, D. C. Editorial Committee, B. Y. Morrison, Chairman; Sherman R. Duffy, V. E. Grotlisch, P. L. Ricker, J. Marion Shull, John P. Schumacher, Hamilton Traub.

All members are cordially urged to send in papers and notes for publication to the chairman, at 116 Chestnut St., Takoma Park, D. C.

FLOWER SHOWS

At this time of year those of us who have labored with the flower shows that are held in our several localities look back with rather mixed feelings toward the efforts, indeed the labors, that have been put into them. Even in our most dubious moments, however, I am sure we have no real doubt as to the value of the shows. There is no question that a love and knowledge of the flowers is spread to many people who would have no other opportunity of knowing what is going on in the horticultural world. This inevitably brings business to those engaged in selling such plants and a greater store of beauty to the world as well as enrichment to the lives of the new gardeners. The most genuine doubt that arises is that which appears when one overhears the comments of less successful exhibitors who speak scornfully of new plants which can appear only in the exhibits of those who can pay for novelties at novelty prices, and again when one hears originators who speak with poorly concealed pride in their own work to the exclusion of all else. This sort of conflict is most frequent, is most likely to occur at iris, gladiolus, and dahlia shows, as these flowers are most often the plants which amateurs hybridize and show as their own creations. Plants like roses and peonies which come more slowly into maturity after breeding are less often shown by amateurs who will not devote their efforts to such tedious work.

In Bulletin No. 23 of The American Iris Society, Mr. Sydney B. Mitchell gives a very thoughtful discussion of the matter of novelties in this

particular plant, which every amateur should read. If it were possible also to set forth an estimate of the time and labor that goes into the production of any novelty; if it were possible to make an even sharper differentiation between the standard lists and the specialists' lists, I believe the amateur would be still more patient of the apparent excessive activity of the originators. It is not reasonable to expect every plant introduced to remain a standard variety. This has never been the history of horticultural varieties. There are some individual plants which do remain standards of perfection for great lengths of time, the length of time usually showing a close relation to the length of time taken in developing the plant and a commercial stock of it and the length of time required for it to reach maturity in the purchaser's garden.

The essential thing is a rather sporting attitude on the part of the amateur. When he buys from a specialist, he should realize that what is presented, even if he does not value it, represents the judgment of the introducer who has selected the plant from hundreds, perhaps thousands of its kind. If the purchaser does not buy on this basis, he should buy only from the standard lists that are advanced by large growers which represent the current mean of development, and bring his flowers to shows with the knowledge that they must compare perhaps unfavorably with the latest creations. There have been fashions in dress, in architecture, in styles of gardening. Why should each new horticultural variety have to be a milestone in development which will not soon be past.

1927 Spring Flower Exhibition

The Fourth Annual Spring Flower Exhibition of the Society was again held in the Hall of Nations of the Hotel Washington, Washington, D. C., June 1 and 2. The exhibition was formally opened by Mrs. W. M. Jardine, wife of the Secretary of Agriculture. At the opening the invited guests of the Society included the Diplomatic Corps and other persons of prominence in Washington. Mrs. Coolidge was not able to be present at the opening this year due to another engagement.

The consensus of opinion was that the exhibition was a decided improvement over the successful show of last year both from the ensemble effect and from the quality of the individual exhibits. The number of exhibitors was larger than at any show held previously and competition was keen in many of the classes. The attendance this year was not up to normal but plans are already under way by which more effective advertising will be used for the 1928 exhibition.

PATRONESSES FOR THE EXHIBITION

Mrs. Robert Woods Bliss	Mrs. W. M. Jardine
Mrs. Avery Coonley	Mrs. Herbert L. Satterlee
Mrs. Louis A. Frothingham	Mrs. Charles H. Stout
Mrs. Francis King	Miss Grace Sturtevant
Mrs. Frederic A. Parkhurst	Mrs. Mary V. Walcott
	Mrs. William M. Weaver
	Mrs. George Ellery Wood

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GROUP I—PEONIES

- Collection of Herbaceous Peonies—First, Schwartz Peony Gardens, Gaithersburg, Md.; second, Mr. George W. Peyton, Rapidan, Va.
Twenty named, double varieties of Peonies—First, Schwartz Peony Gardens, Gaithersburg, Md.
Ten named, double varieties of Peonies—First, Schwartz Peony Gardens, Gaithersburg, Md.
Three varieties of Japanese Peonies—First, Schwartz Peony Gardens, Gaithersburg, Md.; second, Mr. George Payton, Rapidan, Va.
Three named, double white varieties of Peonies—First, Schwartz Peony Gardens, Gaithersburg, Md.
Three named, double rose pink varieties of Peonies—First, Schwartz Peony Gardens, Gaithersburg, Md.
Three named, double salmon pink varieties of Peonies—First, Schwartz Peony Gardens, Gaithersburg, Md.
Three named, double red or crimson varieties of Peonies—First, Schwartz Peony Gardens, Gaithersburg, Md.

GROUP II—ROSES

- Collection of any and all classes of Hardy Roses, named—First, Mr. Whitman Cross, Chevy Chase, Md.
Hybrid Rugosa Roses, named—First, Mr. Whitman Cross, Chevy Chase, Md.; second, Mrs. S. S. McCloskey, Washington, D. C.
Cut sprays of Climbing Roses, named—First, Mr. S. B. Detwiler, Clarendon, Va.; second, Mrs. S. S. McCloskey, Washington, D. C.
Cut sprays of Baby Ramblers, named—First, Mr. Whitman Cross, Chevy Chase, Md.
Three blooms of any white Hybrid Perpetual Rose, named—First, Mr. H. J. Clay, Washington, D. C.; second, Mr. Whitman Cross, Chevy Chase, Md.; third, Mr. J. P. Schumacher, Washington, D. C.
Three blooms of any pink Hybrid Perpetual Rose, named—First, Mr. Whitman Cross, Chevy Chase, Md.
Three blooms of any red Hybrid Perpetual Rose, named—First, Mrs. S. S. McCloskey, Washington, D. C.; second, Mr. Whitman Cross, Chevy Chase, Md.; third, Mr. J. P. Schumacher, Washington, D. C.
Three blooms of any white Hybrid Tea Rose, named—First, Mrs. E. B. McLean, Washington, D. C.
Three blooms of any light pink Hybrid Tea Rose, named—First, Mrs. E. B. McLean, Washington, D. C.; second, Mrs. C. C. Brown, Washington, D. C.; third, Mrs. F. L. Mulford, Washington, D. C.

- Three blooms of any deep pink Hybrid Tea Rose, named—First, Mrs. E. B. McLean, Washington, D. C.; second, Mr. A. H. Engelbrecht, Washington, D. C.; third, Mrs. C. C. Brown, Washington, D. C.
- Three blooms of any yellow or orange Hybrid Tea Rose, named—First, Mrs. C. C. Brown, Washington, D. C.; second, Mrs. E. B. McLean, Washington, D. C.
- Three blooms of any red or crimson Hybrid Tea Rose, named—First, Mrs. E. B. McLean, Washington, D. C.; second, Miss L. W. Gillingham, Alexandria, Va.
- Three blooms of any other Hybrid Tea Rose, named—First, Mr. G. R. Goergens, Washington, D. C.
- One bloom of any white Hybrid Tea Rose, named—First, Mrs. S. B. Detwiler, Clarendon, Va.; second, Mrs. J. P. Schumacher, Washington, D. C.; third, Mrs. S. S. McCloskey, Washington, D. C.
- One bloom of any light pink Hybrid Tea Rose, named—First, Mrs. J. P. Schumacher, Washington, D. C.; second, Mr. Whitman Cross, Chevy Chase, Md.; third, Mr. H. J. Clay, Washington, D. C.
- One bloom of any deep pink Hybrid Tea Rose, named—First, Mrs. Louis Scott, Alexandria, Va.; second, Mr. Whitman Cross, Chevy Chase, Md.; third, Mr. A. H. Engelbrecht, Washington, D. C.
- One bloom of any yellow or orange Hybrid Tea Rose, named—First, Mrs. Latham Fletcher, Warrenton, Va.
- One bloom of any red or crimson Hybrid Tea Rose, named—First, Mrs. S. S. McCloskey, Washington, D. C.; second, Mr. A. H. Engelbrecht, Washington, D. C.

GROUP III—IRIS

- Collection of Beardless Iris, named varieties—First, Mr. J. M. R. Adams, Takoma Park, Md.; second, Jos. A. Herbert, Jr., Washington, D. C.
- Collection of Iris siberica, named varieties—First, Mr. J. M. R. Adams, Takoma Park, Md.; second, E. W. Sheets, Washington, D. C.; third, Mrs. S. B. Detwiler, Clarendon, Va.
- Collection of Bearded Iris, named varieties—First, Mr. E. W. Sheets, Washington, D. C.; second, Mrs. G. T. Boul, Woodridge, D. C.
- Vase of tall Bearded Iris, light colors—First, Mrs. Chester A. Wells, Chevy Chase, Md.; second, Mr. L. M. Clarke, Washington, D. C.
- Vase of tall Bearded Iris, intermediate colors—First, Mrs. W. J. Phelps, Elkridge, Md.; second, Mrs. E. B. McLean, Washington, D. C.; third, Mrs. Chester A. Wells, Chevy Chase Md.
- One variety of Spanish or Dutch Iris—First, Mrs. E. B. McLean, Washington, D. C.; second, Mrs. W. J. Phelps, Elkridge, Md.; third, Mr. J. M. R. Adams, Takoma Park, Md.
- Six varieties of Spanish or Dutch Iris—First, Mr. J. M. R. Adams, Takoma Park, Md.
- One variety of Iris kaempferi—First, Mr. J. M. R. Adams, Takoma Park, Md.
- Vase of tall Beardless Iris—First, Mr. E. W. Sheets, Washington, D. C.; second, Mrs. W. J. Phelps, Elkridge, Md.

GROUP IV—HERBACEOUS PLANTS

- Anchusa—First, Mr. H. J. Clay, Washington, D. C.; second, Mrs. S. B. Detwiler, Clarendon, Va.
- Campanula medium—First, Walter Reed U. S. A. Hospital, Washington, D. C.
- One stalk of Columbine—First, Mr. B. H. Lane, Washington, D. C.; second, Mrs. Chester A. Wells, Chevy Chase, Md.

- Three stalks of Columbine—First, Mr. B. H. Lane, Washington, D. C.; second Mrs. R. R. Barrett, Warrenton, Va.
- Coreopsis—First, Mrs. Louis Scott, Alexandria, Va.; second, Mr. G. R. Goergens, Washington, D. C.
- Cornflower—First, Walter Reed U. S. A. Hospital, Washington, D. C.; second, Mr. H. J. Clay, Washington, D. C.
- Delphinium—First, Mrs. W. J. Phelps, Elkridge, Md.
- Forget-me-not—First, Mr. J. P. Schumacher, Washington, D. C.; second, Walter Reed U. S. A. Hospital, Washington, D. C.
- Foxglove collection—First, Walter Reed U. S. A. Hospital, Washington, D. C.; second, Dr. Julia Greene, Washington, D. C.
- Gaillardia—First, Walter Reed U. S. A. Hospital, Washington, D. C.
- Hemerocallis—First, Mr. Roy G. Pierce, Takoma Park, D. C.
- Lupine—First, Mrs. G. T. Boul, Woodridge, D. C.; second, Mr. H. J. Clay, Washington, D. C.
- Collection of Pansies—First, Mrs. A. J. Webb, Clarendon, Va.; second, Mr. L. M. Clarke, Washington, D. C.; third, Miss Catherine L. Weaver, Washington, D. C.
- Individual Pansy flower—First, Miss Catherine L. Weaver, Washington, D. C.; second, Mr. L. M. Clarke, Washington, D. C.; third, Mr. H. J. Clay, Washington, D. C.
- Pinks—First, Mrs. E. M. Reinohl, Riverdale, Md.; second, Mrs. M. M. O'Keefe, Randle Cliffs, Md.
- Oriental Poppy—First, Mrs. W. J. Phelps, Elkridge, Md.; second, Walter Reed U. S. A. Hospital, Washington, D. C.; third, Mrs. C. C. Brown, Washington, D. C.
- Pyrethrum, 1 color—First, Mrs. F. L. Mulford, Washington, D. C.; second, Mr. H. J. Clay, Washington, D. C.
- Pyrethrum collection—First, Miss Catherine L. Weaver, Washington, D. C.

GROUP V—ORCHIDS

- Individual specimen Orchid—First, Mr. D. Lumsden, Bethesda, Md.

GROUP VI—SWEET PEAS

- Pink Sweet Peas—First, Mrs. C. C. Brown, Washington, D. C.; second, Mrs. G. T. Boul, Woodridge, D. C.

GROUP VII—LILIES

- Lilium—First, Mr. Roy G. Pierce, Takoma Park, D. C.

GROUP VIII—WATER LILIES

- Collection of Water Lilies—First, Mrs. L. Helen Fowler, Kenilworth, D. C.
- Six named varieties of Water Lilies—First, Mrs. L. Helen Fowler, Kenilworth, D. C.
- One variety of Water Lily—First, Mrs. L. Helen Fowler, Kenilworth, D. C.

GROUP IX—WILD FLOWERS

- Collection of Wild Flowers—First, Mr. J. M. R. Adams, Takoma Park, Md.; second, Mr. H. J. Clay, Washington, D. C.

GROUP X—OTHER ORNAMENTALS

- Collection of Ferns—First, Mr. Jos. A. Herbert, Jr., Washington, D. C.; second, Mrs. M. M. O'Keefe, Randle Cliffs, Md.
- Specimen Fern—First, Mr. Jos. A. Herbert, Jr., Washington, D. C.

French Hydrangeas—First, Mr. Jos. A. Herbert, Jr., Washington, D. C.
 Twelve kinds of Shrubs—First, Mr. J. M. R. Adams, Takoma Park, Md.
 Six kinds of Shrubs—First, Mr. J. M. R. Adams, Takoma Park, Md.
 One kind of Shrub—First, Mrs. Louis Scott, Alexandria, Va.

GROUP XI—FLOWER ARRANGEMENT

Jardiniere of Flowers—First, Mrs. Latham Fletcher, Warrenton, Va.; second, Miss L. W. Gillingham, Alexandria, Va.; third, Mrs. C. C. Brown, Washington, D. C.
 Large Basket of Flowers—First, Miss Virginia Shull, Chevy Chase, Md.; second, Mr. George C. Shaffer, Washington, D. C.; third, Mrs. C. C. Brown, Washington, D. C.
 Small Basket of Flowers—First, Walter Reed U. S. A. Hospital, Washington, D. C.; second, Mrs. F. L. Mulford, Washington, D. C.
 Basket of outdoor grown Flowers—First, Walter Reed U. S. A. Hospital, Washington, D. C.; second, Mrs. G. T. Boul, Woodridge, D. C.; third, Mrs. J. P. Schumacher, Washington, D. C.
 Twelve varieties of hardy Herbaceous Perennials—First, Mrs. Chester A. Wells, Chevy Chase, Md.; second, Walter Reed U. S. A. Hospital, Washington, D. C.
 Vase of Roses—First, Mrs. Latham Fletcher, Warrenton, Va.; second, Mrs. J. P. Schumacher, Washington, D. C.
 Basket of Roses—First, Mr. A. H. Engelbrecht, Washington, D. C.
 Table decorated by a Garden Club—First, Woodridge Garden Club.

GROUP XII—DINING TABLE DECORATIONS

Dining table decoration of Roses—First, Gude Bros. Co., Washington, D. C.; second, Mrs. T. J. Brown, Washington, D. C.; third, Mrs. L. Helen Fowler, Kenilworth, D. C.
 Dining table decoration of other flowers—First, Gude Bros. Co., Washington, D. C.
 Special dining table decoration—First, Mrs. L. Helen Fowler, Kenilworth, D. C. (Water Lilies)—First, Gude Bros. Co., Washington, D. C. (wedding table).

GROUP XIII—FRUITS

General Fruit Class—First, Mr. A. H. Engelbrecht, Washington, D. C.

GROUP XIV—VEGETABLES

Beets—First, Mr. H. J. Clay, Washington, D. C.
 Lettuce—First, Mr. J. F. Belfield, Washington, D. C.
 Peas—First, Mr. H. J. Clay, Washington, D. C.
 General Class—First, Mr. H. J. Clay, Washington, D. C.; second, Mr. A. H. Engelbrecht, Washington, D. C.

GRAND PRIZE

The points scored by the various members of local Garden Clubs and Civic Associations counted toward the Grand Prize which goes to the organization securing the greatest sum of points. The following is the standing of the organizations which competed:

Woodridge Garden Club	131
National Capital Dahlia and Iris Society	53
Palisades Garden and Landscape Club	27
Warrenton (Va.) Garden Club	21

Arlington (Va.) County Garden Club	19
Alexandria (Va.) Garden Club	15
Georgetown Garden Club	11
Takoma Horticultural Club	10
Burleith Garden Club	6

HONORABLE MENTION

The following were awarded Honorable Mention for displays as indicated:

- Mrs. Wm. K. Dupont, Wilmington, Del. Display of Tree Peonies.
 Garden Supply Co., Ballston, Va. Display of a Perennial Garden.
 Gude Bros. Co., Washington, D. C. Stage decorations of Palms and Cibo-
 tiums.
 J. Keur & Co., New York City. Display of Gladiolus.
 Mrs. E. B. McLean, Washington, D. C. Display of Standard Geraniums, Hy-
 drangeas and Astilbes.
 Mrs. Frank B. Noyes, Washington, D. C. Display of Schizanthus wisetonensis.
 Mrs. W. J. Phelps, Elkridge, Md. Display of Perennials.
 U. S. Department of Agriculture Greenhouses. Decorations of Palms and Ferns.

CERTIFICATES OF MERIT

The following were awarded Certificates of Merit for displays as indicated:

- Mr. Jos. A. Herbert, Jr., Washington, D. C. Display of Hybrid Delphiniums.
 Mr. J. Marion Shull, Chevy Chase, Md. Display of Iris.
 U. S. Department of Agriculture Greenhouses. Display of Viola, Jersey Gem.
 Warrenton Garden Club, Warrenton, Va. Display of a model of a wayside
 refreshment stand.

1928 Flower Exhibition to Offer McLean Trophy

At a final meeting of the Exhibition Committee for the 1927 Spring Flower Exhibition, Mr. David Lumsden, chairman of the committee, announced that Mrs. Edward B. McLean, Friendship Estate, Washington, D. C., has offered to present a silver trophy

to the American Horticultural Society for them to offer at their 1928 Spring Show. During the fall when definite plans are developing for this Exhibition announcement will be made as to the manner in which this trophy will be put into competition.

For dry sandy gardens and poor soil the mountain sages, *Salvia azurea* and the identical but a slightly deeper blue *Salvia pitcheri*, are sure-fire bloomers, furnishing masses of pure blue. If it is a wet season they must be tied up as the moisture seems to give them weak backs and they sprawl badly. Tying the stems to keep them rather closely grouped is advisable to secure the best blue effect as the spikes are rather sparsely flowered.

The roots penetrate deeply and a plant once established is there for an

indefinite stay. It will require considerable mining to get it out once it is anchored. They are easily raised from seed and self-sow very readily. The flower stems should be cut before seed ripens or there will be considerable toil in rooting out seedlings.

The flowering spurge, *Euphorbia corollata*, which in the last few seasons has been taken up by florists, can also be dug up and moved to the flower garden. It will be found by thousands along these railway wild gardens.

The European Background of American Horticulture

BY HAMILTON TRAUB.¹

There is a vast difference between the horticultural operations of our ancient European ancestors and the specialized industries which are at present designated as horticulture. In the primary food providing activities of the ancient Romans, the rearing of plants useful in domestic economy within the limited area of the *hortus* or inclosure, was distinguished from the cultivation of the larger area of the *ager*, or open field. Similarly, the early Anglo-Saxon referred to the inclosed area given over to the cultivation of plants as the *zerd*, *garth*, or *yard*, words which have a common Aryan root meaning inclosure. Long before 1850, however, the horticultural or gardening operations, in the case of the most advanced countries, were no longer confined exclusively to the inclosure. Other developments had also taken place. In the United States, by the middle of the Nineteenth Century, extensive commercial orchards had been planted; certain persons specialized in the growing of trees and shrubs required in the extension of orchards or the embellishment of the home grounds; others were engaged in the forcing of vegetables and flowers under glass for sale on the market; and still others made it their business to grow garden seed, especially onion seed, in Connecticut, or flower seed in western New York. Specialization, in the horticultural industries, had not only begun but had also proceeded a considerable distance. The connected account of this transformation is the history of horticulture.

In the Seventeenth Century horticulture in England,² except in and near the larger cities,³ was still primarily a domestic or amateur industry. The

kitchen garden provided certain necessities of the laborer and the country gentleman. The gardens, orchards, orangeries, and conservatories of the larger estates provided the luxuries demanded by the nobility and the men of means. As a rule the proprietors of the larger estates went to the expense of employing the services of a competent landscape designer to plan the estate. A head gardener and laborers were also required to keep up the horticultural establishment.

The "Industrial Revolution," beginning in England in the latter half of the Eighteenth Century, brought with it the gradual transformation of the industrial and social life of the people and provided the basis for a greater development of commercial horticulture. At the opening of the Nineteenth Century, however, specialization in horticulture had not proceeded far. In England, market gardening, including the production of vegetables and fruits for the local market, was a typical commercial occupation. On the continent of Europe, in the central and southern sections, viticulture had early assumed considerable commercial importance. In High Germany, at Erfurt, the export garden seed industry had become a leading pursuit by the middle of the Eighteenth Century. The great commercial development of horticultural industries, however, particularly in

²The progress in the development of the political, industrial and social institutions in Europe was not uniform, and reference is therefore confined chiefly to England as a typical example. The period prior to the Seventeenth Century is not within the scope of this thesis.

³The gardeners of the city of London were incorporated by Royal Charter in 1605, during the reign of King James I. Evelyn Ceail, *Gardening in England*, 3d Ed., p. 117.

¹A portion of a Thesis on The History of American Horticulture, 1800-1850.

North America, is a part of the economic history of the Nineteenth Century. But we are here concerned primarily with the development of horticulture in the United States during the first fifty years after 1800.

At the outset it is imperative that the method of treatment be very clearly defined. The object of this research is to trace the development of horticulture as part of the economic history of the United States. For practical reasons we have chosen not the chronological but the topical method of treatment.

During the period of American colonization in the Seventeenth and Eighteenth Centuries and even after the political ties with England had been severed in the last quarter of the Eighteenth Century, and for an indefinite period after 1800 the European background of American horticulture was an important factor in its development, for American horticulture, like American culture in general, of which it is a component part, is not indigenous but is a branch of the vigorous tree of European civilization. A distinctively American civilization, if we may use such a term to designate our present cultural achievements, was developed only gradually. During the pioneering period, particularly before 1850, when the energies of the people were primarily directed to the task of reclaiming a continent from the wilderness, Americans were almost wholly dependent upon the European horticultural tradition. There was as yet no important native school of scientists to pave the way for further advances in horticulture and the other useful arts. The lack of adequate economic foundation and encouragement from the civil government also explains in part our dependence upon foreign achievements during the formative period of American history. As late as 1837, A. J. Downing observes,—“with but little superfluous individual wealth, and without any assistance or examples from a government, which, struggling into existence, could find resources to en-

courage only the useful and not the agreeable, whatever has been done has been effected by private means, and to gratify private taste.”⁴

In the consideration of the development of American horticulture, therefore, it is essential that the European background be given its proper place, since foreign as well as native factors have affected its unfolding, not only during the years of colonial dependence, but to a greater or lesser extent since the achievement of political independence. As an introduction to the subject, we shall now proceed to a consideration of the status of horticulture in Europe, with special reference to the status of the industry in Britain⁵ at the opening of the Nineteenth Century, and the scientific discoveries, invention and other factors which have directly influenced the development of the horticultural industries in the United States.

SCIENTIFIC AND TECHNOLOGICAL PROGRESS

The scientific discoveries and technical achievements of Europeans during the period from 1800 to 1850, were so far in advance of any corresponding achievement in the New World, that our horticulturists were in the position of learners from the older countries. It should be realized, however, that any advance in the sciences and arts in Europe, even after 1800, was very gradual.

On the whole the Seventeenth Century was characterized by unenlightenment as far as any truer insight into the scientific bases of plant science

⁴Magazine of Horticulture, 1837, p. 3.

⁵Although America is indebted directly and indirectly to the European horticultural tradition in general, it is to British horticulture that Americans owe their greatest debt since early Americans were more closely in touch with the motherland through a common language, a common historical tradition and ties of kinship. On the whole the British Isles served as the main avenue of communication with America in the adaptation of European horticultural plant materials and practices.

was concerned. In England it was a century in which adaptation of Continental usages was still carried on to a marked extent and horticultural writers, as a rule, took much on hearsay.⁶ Ralph Austen, writing in the middle of the Seventeenth Century, "fills several pages in contradicting old-fashioned notions—'Errors Discovered,' he calls it—such things as writing an inscription on a peach-stone or almond, and planting it, expecting the same writing to appear in the ripe fruit of the tree; or 'To have all stone fruit taste as yee shall think good, lay the stones to soak in such liquor as yee would have them taste of'; or again: 'To have red apples, put the grafts into Pike's blood.' He thus sums up such like recipes: 'These things can not be.' 'Errors in practice' he seeks to correct also, and shows good sense in his remarks on planting or moving fruit trees: 'Many remove their trees in winter or neere the Spring, whereas they ought to remove them in September or thereabouts.' Another error was 'planting trees too neere together; I account 10 or 12 yards a competent distance for apple trees or pear trees, for cherry or plum 7 or 8.' Many plant 'too old trees in orchards, and neglect to plant their trees in as good or better soyle, than that from which they were removed * * *'. The necessity of refuting such errors shows how primitive many gardeners still must have been in their ideas. A small work on fruit trees by Francis Drope in 1672, is free from absurdities; but Adam Speed's book, a few years later than Austen's, is full of errors as apparently ludicrous as those 'discovered' by Austen, so gradual is the passage 'from darkness to dawn.' Only two of his solemn assertions need be quoted as specimens: 'To make white lilies become red, fill a hole in a lily root with any red colour,' and 'The roots

of roses set among broom will bring forth yellow roses.'

He suggests that sow thistles be planted, as 'they will maintain * * * calves, lambs, pigs * * * and millions of rabbits!'"⁷

Even during the later years of the Seventeenth Century little progress had been made toward a more perfect understanding of the functioning of the living plant. "Gardeners seem to have understood," writes Evelyn Cecil, "that a certain amount of air was necessary for plant life, but * * * they by no means realized the power of light. Sharrook, writing on the subject, comes to the conclusion that 'the coldness and briskness of the free air * * * produces verdure,' and to prove this, he takes for example flowers shut in rooms, the leaves of which become paler,' and the 'whiting of the leaves of Artichoke, Endive * * * Alexander, and other plants, which is done, by keeping them warm without the approach or sentiment of cool fresh air.'"⁸

The work of a long line of diligent workers during the Eighteenth Century gradually dispelled the unscientific outlook on plant science in part, for "Grew, Malpighi, Linnaeus, Hales, Bonnet, Du Hamel, Hedwig, Spallanzani, etc., cleared away in a great measure the ignorance which enveloped Vegetable Physiology. Previous to their days the male bearing plants of Dioecious Plants as Spinach, and Cucumbers, etc., were recommended to be removed as useless; they taught * * * the mode of raising varieties; in short all the phenomena of vegetable life which throw so much light upon the practice of the Gardener, were first noted and explained in the labours of these Philosophers * * *. Another class of Philosophers who contributed * * * to the advancement of Horticulture, were those chemists who specially devoted themselves to the Vegetable World. Such men were In-

⁶Evelyn Cecil, *Gardening in England*, 3d Ed., p. 117.

⁷Ibid, p. 160.

⁸Ibid, p. 177.

genhouz, Van Helmont, Priestly, Sennebier, Schrader, Saussure, etc. * * *

To them we are indebted for the most luminous researches into the good of plants, the influence of air, of heat, of light, and of soils. Previous to their researches the immense importance of the leaves of the Plants was unknown."⁹

Sir Humphrey Davy (1778-1829), with the publication of *Elements of Agricultural Chemistry* in 1814, gave to the public a unified conception of the researches in agricultural chemistry and plant physiology of his predecessors and contemporaries. But there was still much pioneer work to be performed to fill in the great gaps. The work of Day remained unchallenged until Justus Von Liebig (1803-1873) published his essentially valid conception of the functioning of the living plant in 1840.¹⁰ A detailed consideration of the work of Davy and Liebig, however, is reserved for a later chapter.

⁹George W. Johnson, *A History of English Gardening*, 1829, pp. 149-150.

Cecil, *Gardening in England*, 3d Ed., pp. 283-284. The Royal Gardens at Kew, begun in 1760, have played an important role in the advancement of plant science. Under the very able directorship of eminent men of science the institution assumed an important role in the scientific investigations.

¹⁰*Chemistry in Its Application to Agriculture and Physiology*, London, 1840.

[TO BE CONTINUED]

Native bulbs that may be dug up and transplanted in full bloom with no appreciable set back are the quamash, *Camassia esculenta*, and the nodding wild onion, *Allium cernuum*. These bulbs are useful to tuck in among Siberian iris plantings, the quamash giving a flash of its pale blue bloom before the irises and the allium a later display of its pink globes. There are great colonies of both along the middle western railroad rights of way. The quamash varies from almost white to a deep blue, but

the latter are the rarest as well as the handsomest.

With these bulbs is usually found the shooting star, *Dodecatheon media*, which may also be dug up in full bloom and planted in the garden. It will die down at once but will appear vigorously the following year, particularly if the soil is slightly acid.

It is useless to move the prairie violet, *Viola pedata*, usually found with the foregoing unless it can be placed in acid soil.

A BOOK OR TWO

The *Iris*¹ by John C. Wister, President of The American Iris Society since its organization, is one of the recent volumes in The Farm and Garden Library sent out by The Orange Judd Publishing Co., under the general editorship of Professor Frank A. Waugh. The books are designed to meet the needs of the interested amateur, who is not, and has no desire to become a specialist in the field.

This volume succeeds admirably in this purpose and is already gaining the enthusiastic praise of many gardeners. The illustrations are good. One, unfortunately, is incorrectly named, for the photograph called *Iris cristata alba* is unmistakably *Iris tectorum alba* with its characteristic shape and tall stalk which do not appear in *cristata* as can be seen in the frontispiece. There are several regrettable but not unpardonable typographical errors which the iris lover will understand and pass by. It is doubtful if "the man in the street" will appreciate the lists at the end of the volume, but the initiated will not undervalue them.

The cultural directions and the discussion of the difficulties which may arise with soil, insects or diseases are satisfactory. The historical back-

¹The *Iris*, by John C. Wister. Orange Judd Co., New York, 1927.

ground should be of great interest to every one who raises the plant. The discussion of varieties, especially in the section of the familiar bearded iris, is probably much too conservative. The sorts named are all very well but they are already overshadowed by varieties which will soon be reasonable in price. As the virtues of the present plants are already sufficiently recorded, a more forward looking list would have been more inspiring.

The author has drawn freely upon the bulletins of The American Iris Society and freely acknowledges his debt to that excellent organization.

This, together with his own years of personal experience, makes the book one of singular authority.

CONCERNING GLADIOLUS

Two very different books have appeared this spring dealing with this popular garden flower. Of the same series as Mr. Wister's iris book is *The Gladiolus*² by Dr. A. C. Beal. His volume is designed for the same readers and is limited by the same necessary restrictions. It remains, however, a very readable and useful volume, giving explicit and clear directions for the successful growing of this plant. Every amateur should have it in his library if he is growing this plant.

*The Gladiolus Book*³ by Dr. McLean, Mr. Clark and Mr. Fischer is prepared with another point of view in mind, and while it is no less instructive, it is not so obviously prepared with an informative purpose. For the present reviewer, the most interesting part of the volume is that which tells about the natural distribution of the many species, their appearance and the qualities that they have given to the several strains of garden hybrids that have been developed through the years. Indeed some of the illustrations of the species are so lovely that one regrets that they are not commonly in cultivation. The discussion of possible future develop-

ments is also of great interest and it is pleasant to see that there are many hybrids appearing in which there is more of grace and charm than in the gorgeous but stiff inflorescences that have been developed largely, perhaps, because they shipped and sold better.

No matter how surfeited with flowers one may be before the autumn is past, he turns with an eager anticipation to the first flowers of the spring. For this reason, a title "*Winter Blossoms From The Outdoor Garden*"⁴ catches the eye and fancy of the gardener in spite of the fact that the book is from England where the winters in many ways are far milder than we know. After a brief resume of the methods of plant propagation that might be of interest to the reader there follow in alphabetical order a list of the plants that flower during the winter. The descriptions are brief but for the most part adequate. The illustrations, however, are lamentably poor with stiff ugly lithographs and very inaccurate coloring, noticeably so in the figures of *Iris unguicularis* and *Rhododendron dahuricum* in the volume in hand.

The Pennsylvania Horticultural Society has issued a very pleasant volume, "*Garden Books New and Old*,"⁵ compiled by Mary Evans, in which one finds a semi-bibliographical list of books with passing comments which should be of value to the would-be purchaser of garden literature.

²*The Gladiolus*, by Dr. A. C. Beal. Orange Judd Co., New York, 1927.

³*The Gladiolus Book*, by Dr. Forman T. McLean, William E. Clark, and Eugene Fischer. Doubleday Page & Co., Garden City, N. Y., 1927.

⁴Darnell, A. W. *Winter Blossoms from the Outdoor Garden*. L. Reeve & Co., London, 1926.

⁵Evans, Mary. *Garden Books New and Old*. Pennsylvania Horticultural Society, 1926.

The Gardener's Miscellany



Photograph by T. J. Sturtevant

Siberian Iris

SWAMP IRIS

The Siberian iris and the allied Chinese species form one of the loveliest pond side plantings. Lythrum and the summer flowering daylilies will prolong the flowering until the summer mallows come. The tall members of the Spuria Group will also flourish in such places and flower after the Siberians and before the familiar Japanese iris.

NOTES FROM SANTA BARBARA

The Garden Tours of Santa Barbara have worked out extremely well under the efficient management of Miss Pearl Chase. Owners of private gardens give permission to visitors with blue tags of the committee to visit their gardens on special days and hours. Over five hundred dollars has been gained through the fifty-cent

fee, which has been used to buy garden books for the Garden School and to supply prizes for garden contests and competitions.

THE BLAKSLEY BOTANICAL GARDEN

The Hazard Memorial Museum of Santa Barbara is making marked progress in the horticultural field. Dr. E. J. Bissell reports that operations in the Blaksley Botanical Garden, a new area, are progressing satisfactorily. This beautiful property located in Mission Canyon about two miles beyond the mission itself, has tremendous advantages, a superb view, interesting land contours, a fresh-water stream and, best of all, many existing native plants. As this is a new development, much remains to be done. A short approach road from the highway leads to several small buildings. Trails into the canyon are being opened. Fine trees and huge boulders afford accents for design. Pond lilies are established in a rock-bordered pool. The heavy, dark soil of a plowed field gives promise of rich plantations. Green painted labels with black lettering are used.

Beside the garden, the museum has just opened the new Clinton Bennett Hale wing for botanical purposes. On April 10, this spacious room was the scene of a reception and exhibition of wild flowers. The enthusiastic guests examined with delight the two hundred eighty varieties of wild flowers shown. To Dr. Reginald C. Robbins was largely due the completeness of the collection. He has also arranged a printed list of "Wild Flowers of the Santa Barbara Region," copies of which were given the guests. The room, forty-five by twenty-five feet, has a red cement floor, cream-colored walls with arches at the sides and brown timbered roof with the beams exposed.

Beyond a large arch in a curved end of the room a wall fountain with a generous tile basis adds a note of bright color. Above this is a panel

representing a heart-shaped vase from which come out large blue dahlia-like flowers. Wall brackets of stone support pots of dense Boston ferns. Higher still, a stained glass window represents conventional roses and bears a memorial tribute to Mr. Hale, "Who loved flowers and the beauty of the earth." The tiles and plants and colored light are a great addition.

As I was coming away, Miss Caroline Hazard called my attention to some water color sketches she had just made of the flower fields near Bakersfield. They showed the sweep of unbroken color to the distant snow-capped mountains. On April 12 I visited the location myself. It surpassed anything I ever imagined. I have seen the mountain pastures of the Sierras, the Alpine meadows of Switzerland and the Pyrenees, poppy fields and the verbenas of the Mojave Desert, but this was a thrill beyond them all. Approached from the Ridge Route, the first view of the plain is a cobalt triangle between bare hills. This unfolds until the carpet of lupines stretches from one's feet for miles and miles to the even bluer mountain ranges. The great plain is cut by the Bakersfield Highway stretching nearly straight for thirty-five miles. Strange to say the blue seemed all on the right of the road while the more vivid hue of the paint brush swept away to the mustard colored hills on the left. The pink, bordering on magenta, made less of an appeal but the whole expanse was unbelievable.

MARCUS H. DALL,
Deane School, Santa Barbara.

A ROSE WITHOUT THORNS

The wild rose in the field may need thorns for protection from its enemies, but the garden rose has but friends, and the thorns are only a test for the love that it receives. The *Rugosa* hybrid, Mme. Edouard Herriot or the ramblers would be equally beloved were the thorns omitted. There are now thornless kinds to-day, but

they have been mostly chance sports and no attempt has been made to breed them.

SPECIES

Several species are unarmed in nature. The Banksia roses are harmless, but not for any but frostless lands. *Rosa macrophylla* is usually unarmed, but it is not as hardy as some species. Other recent species from China, as *R. banksiopsis*, are gentle, but they have no garden forms as yet. Some of the forms of the Bengal (*Rosa chinensis*) are quite thornless, and lack of prickles and bristles may be expected in its hybrids. In Europe, *R. spinosissima* at times is without its many prickles, and it might be domesticated by selection rather than by hybridization. Sometimes *R. cinnamomea* is thornless. The best European species is *R. pendulina* (*R. alpina*), a trailer. Its hybrid, *R. spinulifolia*, is unarmed except for small prickles on the back of the leaflets. The flowers are single pink in late May—very early. Hybrids of the Bengal with *R. pendulina* gave the old Boursault, very early, single to double, in several colors, and worthy of further development as thornless and half-climbing. The best now growing are Amadis and Mme. Sancy de Parabere.

The only thornless American species is *R. blanda*, with smooth red stems. Already hybrids have been made, very hardy, free blooming, thornless, and more are in process. It takes pollen readily from other species. A combination with *R. chinensis* should give thornless hardy everblooming bush roses. If such can be made they should be registered and put into the trade.

GARDEN BUSH FORMS

The old roses, Provence, Moss, French and Damask, always were spiny, with prickles and bristles. The Bengal (or China) rose was less thorny and some old forms, as Mme. Plantier, are quite unarmed. Apparently this will not set seed. The Tea rose always

had stout hooked prickles, and perhaps always will be armed. Some of the Hybrid Perpetuals are wholly thornless, but the only one in common cultivation to-day is Ulrich Brunner, a smooth seedling of Paul Neyron, a thorny plant from thorny parents. The thornless Marguerite Guillard, a sport of Frau Karl Druschki, seems not in the trade. A few Hybrid Teas are nearly thornless, as Argentine Cramon. This lack of prickles must come from the common Bengal parentage in all these roses. The Polyanthas are all armed, while Pernétiana and Hybrid Rugosa are as pickable as hedgehogs. It will take much breeding to get the armament off these. All yellow roses are especially ferocious, but *R. hugonis* is less armed than its relatives, so perhaps thornless yellow bush roses will evolve from it.

GARDEN CLIMBERS

Of modern climbing roses there are several wholly defenseless. Empress of China, Zephirine Drouhin and Kathleen Harrop (all Climbing Bengal) rarely have any inclination to scratch—the Bengal disposition again. Auguste Roussel (Hybrid Macrophylla) has stout, smooth canes, mighty unlike a rose. Some of the Multiflora type are really unarmed, as the four Tausendschon (the pink form, white form, Roserie and Bonnie Prince). Somehow the hooked prickles got omitted, and with them may be associated Warthburg, Auguste Finon and I. X. L. More thornless Multifloras may be discovered. With Hybrid Wichuriana the case is nearly hopeless, for most of them are fiercely armed. But Dr. Huey, a Bengal hybrid (*R. wichuriana* x Gruss an Teplitz) is unarmed, and Papa Rouillard is practically harmless. Climbing Ulrich Brunner is smooth, like a vigorous Kerria in twig, while some of the "Bloomfield" group, as Bloomfield Comet, Bloomfield Exquisite, and Lucy Thomas, are very nearly unarmed. Other thornless Climbing Hybrid Tea sorts may exist already.

The three best thornless parents are

R. chinensis from China, *R. pendulina* from the Alps, and our *R. blanda*. With these and the present unarmed forms some definite results should be possible. The thornless rose garden already has a good array of varieties, and more of them should be created.

STEPHEN F. HAMBLIN, *Director*.
Botanic Garden,
Harvard University.

SILKEN TASSELS FROM PERSIA

The silk tree, to which the Persians have given the enticing name "silk rose," is a native of "warmer temperate Asia from Persia to Japan" (Bailey) but according to Gray has become established in this country "as far north as Virginia." It is a well-known tree in the South, where it is often called mimosa, but the true *Mimosa* is another genus of the numerous family Leguminosae, or pod-bearing plants. The botanical designation of the silk tree is *Albizia julibrissin*, a mouth-filling name derived from Italian and Persian sources. Gray did not extend its range quite far enough north, for it is perfectly hardy in Washington, where there are a number of old trees, including two in the White House grounds—one at the west gate, close by the executive offices, and the other in the front lawn. It has also survived several winters in southern Ohio and may prove to be hardy there.

This handsome tree has finely divided, delicate fernlike foliage closely resembling that of its more tropical cousin the acacia—in fact, it is described in William Robinson's "English Flower Garden" as "*Acacia julibrissin*." The equally delicate flowers are borne in crowded heads toward the ends of the branches, the projecting elongated filaments of the numerous stamens making of each head a pinkish silky tassel or pompon, from which the Persian common name is derived. The tree does not begin to bloom until it is several years old, but the foliage is attractive enough to give it an air of distinction in its very earliest stages.

The silk tree is easily raised from seed and will make, at least in youth, a very rapid growth. Seeds planted in spring will produce trees a foot or more tall the same season, and a tree the second year from seed has been known to reach a height of 8 feet. It withstands pruning and can be trained to any desired shape. A tree three or four years old that was transplanted in the fall of 1921, cut back to a stub a foot high and an inch in diameter, five years later showed a striking array of stout branches 18 or 20 feet long, radiating symmetrically in all directions from the old stub, which had increased in diameter to 8 inches.

The silk tree makes its most rapid growth in full sunshine but will do well in partial shade, where it remains more shrubby. It could probably be made into a beautiful feathery hedge by persistent trimming. Such treatment might prevent blossoming, but even without its rosy tassels the plant is highly ornamental.

BERNARD H. LANE,
Washington, D. C.

A CORRECTION

In the article "Narcissus Parentages" which appeared in the issue for January, 1927, on page 21, the parentages for Correggio and Gallipoli are given as Bernardino x King Alfred. They should be Bernardino x Will Scarlett.

B. Y. M.

A WESTERN SHRUB

The editor is told by Dr. Edwin Kirk that the shrub which Mrs. Stout described in her article on page 64 of the April issue as a shrub, possibly, *eleagnus*, is probably *Shepherdia canadensis*, less well known than the Buffalo Berry, *Shepherdia argentea*. Bailey's Standard Cyclopedia of Horticulture points out that the yellow berried form has been designated as the var. *xanthocarpa*, Rehder. and that there is another species, *rotundifolia*, Parry, which occurs throughout Utah.

The American Horticultural Society

A Union of The National Horticultural Society and The American Horticultural Society

The Society publishes The National Horticultural Magazine, a quarterly journal issued in January, April, July and October to all its members. It publishes special bulletins from time to time as material warrants special issues.

Former bulletins of the Society may be secured from the secretary as long as copies are available.

Number 1. The Effect of Aluminum Sulphate on Rhododendron Seedlings, by Frederick V. Coville	\$1.00
Number 2. Roses for America, by F. L. Mulford50
Number 3. Insect Pests of Our Garden Plants and Their Control, by C. A. Weigel50
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