The NATIONAL HORTICULTURAL MAGAZINE

JOURNAL OF THE AMERICAN HORTICULTURAL SOCIETY

OCTOBER, 1942

The American Horticultural Society

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Publication Office, 32nd St. and Elm Ave., Baltimore, Md. Entered as second-class matter January 27, 1932, at the Post Office at Baltimore, Md., under the Act of August 24, 1912.

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The National Horticultural Magazine

Vol. 21 Copyright, 1942, by The American Horticultural Society No. 4

October, 1942

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Published quarterly by The American Horticultural Society. Publication office, 32nd St. and Elm Ave., Baltimore, Md. Editorial office, Room 821, Washington Loan and Trust Building, Washington, D. C. Contributions from all members are cordially invited and should be sent to the Editorial office. A subscription to the magazine is included in the annual dues to all members; to non-members the price is seventy-five cents the copy, three dollars a year.

Claude Hope

[See page 198]

Passiflora incarnata

Mrs. Christopher Columbus Discovers Key West

Violet Niles Walker

Key West has long been the Mecca of the ardent fishermen, but until the building, first of Flagler's Florida East Coast Railroad, and later of the Overseas Highway, it was so difficult of access to the average traveller that its light was truly hidden under a bushel. Even the Railroad failed to immediately fulfill Flagler's dream of development, for the victims of Prohibition saw it only as the door-way to Havana's wide-open Alcoholic Heaven, and few tarried long enough to discover for themselves the unique quiet charm of the little Island. Little was realized of its colorful background to which pirates, wreckers, Cuban refugees, seafaring men from all nations, etc., etc., have contributed both historical and horticultural atmosphere.

But the completion of the Overseas Highway, built on the wreckage of the Railroad has changed the picture, and the world is beginning to realize the many-sided appeal of our southernmost city.

Particularly is this so in regard to plant lovers and gardeners. While artists, writers, naturalists, climate-seekers, and fishermen find their special interests fully satisfied, it is the amateur horticulturist who receives a genuine thrill at discovering for him or herself the tropical flora that is met on every side, and whose presence so close to home has never, curiously enough, been heralded even in the land of high-powered advertising which is Florida. The State Chamber of Commerce (as well as the city of Key West) has not overlooked the beauty of the Overseas Highway down the Florida Keys, with the fascinating vegetation of the Everglades framed by the brilliant colors of sub-tropical seas. Nor does either miss a proper emphasis on the climatic advantages of the Island. But both have apparently failed to realize fully the appeal of the horticultural picture and its value as a drawing card to the little City.

The traveller entering Key West from the Highway, along the modern palm-bordered Roosevelt Boulevard (modelled on Havana's famous Malécon) is not prepared for the contrast between the low-growing vegetation of the Key and the great tropical trees lining the streets of the old part of the town. Mangroves, Sea Grapes, Beach Plums, *opoponax*, etc., with dwarfer flowering plants and beach vines which have held the scene for 158 miles, give way to a profusion of tropical growth whose size and development bespeak its long presence, yet of whose existence no previous hint has been received. And the question naturally arises "Why the silence?" Certainly few realize that Key West is the oldest settlement in southern Florida, and its streets were lined with established tropical trees, its homes and gardens adorned with shrubs, vines and plants of unparalleled beauty and luxuriant growth before Miami was thought of. It long ante-dates Coconut Grove, where Dr. Fairchild established the nucleus of the U. S. Plant introduction Garden around 1898.

The only answer can be the old adage "Familiarity breeds contempt," and that it has all been there so long, and has prospered so happily that it has lost its identity as a foreigner. A brief glance at the Key West explains this to some extent.

Key West has belonged to the

United States for only 120 years, and economically has undergone almost unequalled vicissitudes. Long before Flagler built his cherished Florida-East-Coast-to-Cuba Railroad, when communication with the mainland was only by slow water transportation, the Island City achieved a prosperity that made it at the time the richest city per capita in the United States, until a wave of sudden, overwhelming cataclysms completely reversed the picture.

Looking at it geographically, as we know, it is a tiny bit of coral rock lying at the tip end of the string of little coral islets which extend 120 miles southwest from the Florida mainland into the sub-tropics. It is about 5 degrees north of the Tropic of Cancer. The Straits of Florida and Gulf Stream on the east, and the Gulf of Mexico on the west exert a greater climatic influence than its actual latitude would indicate. Frost never occurs, and vegetation from the tropics flourishes side by side with the sub-tropical flora of the Keys and the rich Everglades.

We are told that southern Florida and the Keys were the last portion of the continent to emerge from the ocean, and it is interesting to note the gradual diminution of the soil deposit, none too deep for all of its richness, even on the Florida mainland, for at Key West there is an average layer of barely twelve inches of earth. Moreover, any water is brackish. Pure water from boring wells has never been obtained on the island, and the conservation of rain-water assumes the same importance for human life and vegetation that it does in the West Indies generally.

The Spanish discovery and domination of the West Indies and the southern end of the American continent naturally included the long string of islets now known as the Florida Keys. These were long uninhabited except for wandering tribes of Indians pushed further south from the mainland by fiercer enemies of their own race, and all finally exterminated on the last island—whether by fighting or pestilence is not known. But the Spanish fishermen who first visited the island, finding great quantities of human bones, called it Cayo Hueso, or Bone Island, and curiously enough the English adaptation of the name correctly though quite incidentally describes the geographical position of the island, which lies at the extreme western end of the Keys.

In 1822 Spain ceded Florida and its islands to the United States, but shortly prior to that, in 1815, Cayo Hueso was given by the Spanish Governor of the West Indies to a Spanish Cavalry officer, Juan Pablo Salas, in recognition of services rendered the Spanish Crown. He took no interest in it, but an American from Mobile, John Simonton who had been ship-wrecked on a voyage from the Bahamas to Mobile fell in love with it, and after several efforts, finally succeeded in buying it from Salas for $2,000.00. Thus it passed into American hands though still under Spanish rule.

From the time of their discovery in the XVIth century up to the early part of the XIXth, the Florida Keys had not been objects of colonization, chiefly because early in their history they had become the stronghold of the pirates, who, for over two hundred years were the terror of the Spanish Main. The numerous bays among the islands offered safe hiding-places from which to sally forth, and the intricate and dangerous channels afforded strong protection from the arm of the law. This, incidentally, was none too long, as the pirates paid tribute to the Spanish Crown, and enjoyed a care-free immunity in the successful pursuit of their trade.

At the time of investiture into the United States the Keys were still in-

fested by the pirates, known as the "Brethren of the Seas" and their depredations on shipping endangered not only the coastal trade from Mexico and Cuba, but rendered unsafe further colonization or commercial development which the geographical position of the island offered.

All efforts to dislodge these unwelcome neighbors failed, till Commodore David Porter ingeniously and effectively exterminated them. He realized that the frequent failures were due to the difference in size and type of ships employed, since the Navy frigates, with their depth of draft were unable to penetrate into the shallow waters, and the pirates in their light draft rapid sailboats could easily elude their pursuers. So Porter discarded the useless larger frigates and assembled a fleet consisting of eight small-draft schooners and five twenty-oared barges, naming these last after the little stinging insects of the tropics—Gnat, Mosquito, Gallinipper, Midge and Sandfly. He imported a steam ferry-boat from New York (and incidentally this was the first steam vessel used in our Navy), named it the Sea Gull, and towed the barges in pursuit of the Brethren. They were caught up with, Porter unloosed his towing fleet, and chasing the pirates into their lairs, soon wiped them out. The last remaining contingent took refuge in the harbor of Fajardo, Isle of Pines, and were burned out under the very eyes of the Spanish garrison who, remembering the fat tribute they paid to the crown, had refused to give them up.

With the terror of piracy removed, the little island immediately became the objective of a heterogeneous mixture of settlers from all over the world, and the town, laid out in 1829, grew rapidly and prospered phenominally. The early lucrative wrecking business laid the foundations for greater wealth and this was followed by the building up of a flourishing trade in sponges, fish, turtles, salt, tropical fruit (especially the canning of pineapples) to which was added the manufacture of cigars when political refugees from Cuba brought their factories from Havana; and an era of unparalleled prosperity ensued.

With the realization of Flagler's dream of the Railroad came added prosperity, and it looked as though the fortunes of Key West were on a fabuous up and up. But suddenly the tide turned. Labor troubles and unreasonable Union demands caused the owners of cigar factories to seek new methods, and with the discovery that modern science could produce elsewhere the same atmsopheric conditions as had been thought possible only in Cuba and Key West, the factories were quietly removed, some to Tampa, some to Connecticut. Congress passed a tariff law which shut out the pineapples from the West Indies and killed the canning trade, and a little later disease appeared among the sponges; and finally the hurricane of 1935, with its frightful tidal wave swept out great sections of the Railroad with enormous loss of life, including the camp of 3,000 American Legionnaires at Mitacumbe Key. And the glory that was Rome's departed. Since then Key West has lived on Government aid, and though a small group of representative citizens are struggling manfully to help the city help itself, many of the projects planned before present war conditions must be delayed to the future.

Architecturally, Key West is a mixture of types. The earlier homes follow the beautifully simple lines found in the Bahamas or Cuba, with sloping roofs, galleried second stories, high ceilings, solid shuttered windows. Many have outside stairs to the second story. The Victorian era left its mark with many

more-pretentious houses, while the modern trend is toward low spreading types. The array of small, and for the most part unpainted wooden homes of the Cuban, Mestizo and colored population, are built back from the street, and follow an almost uniform pattern, each with its little front porch, smothered in vines, and its little front yard generally a tangle of tropical plants.

The architecture is soon forgotten in the bewildering variety of shrubs, vines and plants, and soon one realizes the value of the soft grey tones as a background for the gorgeous tropical vegetation, and the brilliancy of the tropical skies. Small wonder that Key West attracts artists from all over the country.

The first stroll among the little narrow crooked streets and by-lanes with their sudden blind ends, is a thrilling voyage of discovery to the visiting stranger of horticultural bent. Here and there, amid the profusion of tropical growth, almost fantastically unreal, familiar friends can be recognized as green house subjects or as summer annuals in northern latitudes, or a plant may be identified from some remembered past study or picture. But for the most part it is all bewilderingly new, and small satisfaction is gained by enquiries among the Cuban or Mestizo residents, who can furnish numerous pet names, but none that offer any dependable clew to the family name of the subject.

As one passes a vacant corner lot, a flash of brilliant cobalt blue catches the eye; closer inspection shows the entire lot covered with a tumbling mass of vines bearing that most glorious blue of any flower—*Clitorea ternatea*, native to the Molucca Islands, occasionally grown in our gardens as an annual. To the Cuban it is "The Blue Pea." Fences are smothered in the spectacular *Senecio scandens*, from China, with its masses of brilliant orange bloom, and known only as "Mexican Love Vine." "Heart Flower" is variously applied to several plants, but notably to *Antigonon leptopus* (*Rosa de Montana* or *corallita*) which runs riot even in vacant lots. "Spider Plant," "Orchid Tree," "Slipper Plant," "Cigar Plant," "Tulip Tree," etc., etc., give no hint as to their family pedigree, and when the Cuban imagination gives out it is "some wild flower" or, more expressive still, "Just a flower."

Wild flowers share the same oblivion. Wandering over the sands of the abandoned salt flats, or around the old brick Civil War fort, East Martello Towers, a glossy-leaved evergreen vine bears stunning wide-open cups of fine purplish-violet; along the roadside is found a slender glaucous leaved plant, about 8 inches high, with fringed blue-purple flowers closely resembling our fringed gentians; and a tall shrub, with evergreen foliage is smothered in clusters of tiny brown fluffy balls, intensely fragrant . . . none of these known, apparently, to anyone.

It must be borne in mind that the casual visitor, however flower-minded, is not always a botanist, and therefore the search for information must be directed somewhere . . . but where? A small survey of existing plant material, made in 1933 can be unearthed from the Chamber of Commerce, if the visitor has the bright idea of applying there. As far as it goes, this is helpful, for it gives the locations where the plants can be found; but it mentions an amazingly small percent of the tropical vegetation so evidently long-established, that can be run down by even the rankest amateur in a short sojourn.

Poinsettias furnish the first thrill. Accustomed as we are to the 2-3 -foot potted Christmas specimens, the hundreds of great shrubs from 10 to 15

feet tall (as high as some of the little houses), literally smothered in the brilliant scarlet "flowers" are eye-opening; and when the glistening purity of a white variety is stumbled on in a tiny front yard, or a peep into a back garden discovers an indescribably lovely creamy-pink tone, that visitor "is off" for all time. And what a field for adventuring! For, unlike the combed and brushed aspect of Miami, where every exotic plant is named, nursed with care and kept within bounds on the sophisticated estates, in Key West the rarest tropical plants have escaped from their original homes and without respect to rank or person run riot in the poorest little yard, or even waste places. A street lot, left untouched for any length of time, becomes a tangle of native and exotic material . . . *Crinums, sanseverias, thunbergias, bougainvilleas, hibiscus, opoponax, poincianas,* etc., etc. Seedlings of what to us are rare flowers can be pulled up along the neglected side-walks.

As one becomes familiar with the physical conditions, i.e., the lack of fresh water and the shallowness of the soil, wonder grows at the enormous development of the street trees, so obviously of foreign origin, together with the huge boles of flowering vines which also bespeak their long establishment. The answer given these two questions seems to be, first the ease with which the depth of soil can be increased, since the richest compost can be made from decayed vegetation and rotted fish in an incredibly short time. And second, trees that cannot stand the brackish water do not flourish. Few are found having tap roots. Added to this, it is said that the roots of the trees penetrate the soft coral rock by means of an acidity which they develop, which disintegrates the rock and provides deep root runs.

No record seems to have been kept of what was brought to the little settlement in its early days, but ornamental trees and shrubs must have come practically with the first permanent residents. Today pages could be devoted to the trees alone (instead of only a few words), for from Burma, Australia, Southern Asia, Africa, tropical America, etc., have come the superb specimens shading the wide streets.

To mention but a few of the longest established, *Ficus religiosa*, or Pee-pul tree, the sacred tree of India is one of the largest on the Island, though possibly the palm for size and beauty goes to an enormous *Ficus retusa* (called locally the Alexandrian or Spanish Laurel) whose branches spread entirely across the street. The beautiful feathery African *tamarind* thrives, strangely enough in the shallow soil, growing to 70 feet in some of the home lawns. There are many large specimens of the curious Sand Box or Monkey Dinner-Bell tree (*Hura crepitans*) whose trunks bristle with spines, and whose seed capsules, when ripe, explode with a loud noise.

Another showy tree whose trunk and limbs are covered with countless black thorns is *Erythrina indica*, the Lenten Tree, with brilliant red 3-4-inch blossoms appearing profusely before the leaves making a huge scarlet blotch on the landscape. *Pithecellobium dulce*, the Rain Tree, has long twisted reddish pods opening to show the ½-inch balls of snowy white pulp covering the seeds. *Spathodea campanulata* is one of the most spectacular bloomers, with 6-inch orange flowers in 15-inch clusters. *Bauhinia*, the Orchid Tree is a tropical cousin of our Judas Tree, showing it in the foliage, and with orchid-like lavendar or white flowers in late winter. *Gliricidea*, whose cream and pinkish lavender pea-like flowers hang in racemes like wisteria, blooms before the new leaves; *Moringa moringa*, the

Horse-radish Tree, with distinguished pinnate foliage and clusters of fragrant waxy blooms resembling horse radish in taste, furnishes flavor to Key West salads. And the *ceiba*, or Kapok tree is a sensational mass of soft pink bloom up to the end of January, agricultural bulletins to the contrary, who list it as summer blooming; while its great winged trunks are among arboreal curiosities.

In recent street developments, *Schinus terebenthifolia*, the Brazilian pepper (a close relative of the California variety), *Casuarina equisetifolia*, Australian Pine and *Swietenia mahogani*, Mahogany Tree, have been widely planted as shade trees. Just to list a few among the many strange specimens sounds like a guide book to the great tropics . . . *Quassia amara*, or *simaruba; lignum vitae; Terminalea* (the African almond) *Annona squamosa; Aralia chinense; sapodilla; pomegranate; papaya; mango; Ficus elastica; Jacaranda; Kigelia; Lucuma mammosa*, and so on, *ad infinitum*.

Vines are superlative, from the delicate and fragrant jasmines including the white, richly-fragrant night-blooming *Cestrum nocturnum*, to *Thunbergias* in every shade of purple to blue, as well as the deliciously scented white *Thunbergia fragrans*. The yellow *Allamanda;* the great cream trumpets of *Solandra guttata* (the Chalice flower) which seem out of all proportion to the little porches which they completely envelope; the *bougainvilleas* in all colors. *Pandorea ricasoliana*, with its clusters of great widely-flaring, fluted clear pink cups, heavily spotted with deeper tones of the same color is used as a high climber, or trained low over stone walls giving the effect of a pink hedge. *Monstera deliciosa*, or *ceriman*, that giant among tropical vines, with its unbelievable 18-inch white "calla lily" blooms, its huge fruit and the great leaves over a yard across, climbs high into a 40 foot tree, or up the side of a house. A *Cassia* (named *nodosa* by local authority) is a climbing member of the ubiquitous cassia family, and spreads golden sheets of bloom wherever it gets a foot-hold, even to adorning the stone ruins of the deserted tobacco factories.

Flowering shrubs are bewildering in quantity, variety and beauty. *Hibiscus*, in many tones are freely used as hedge plants. *Caesalpina pulcherrima*, commonly called Dwarf Poinciana, with lovely spidery flowers in clear yellow, orange and orange crimson is no more a respecter of persons than is its summer-blooming cousin, the Royal Poinciana, the "Queen of the Tropics," for it is found everywhere, down to the most tumble-down shanty. *Tecomaria capensis*, a glorious orange-crimson tropical member of the *Bignoniaceae* also screens porches of rich and poor alike. What is locally known as "Candle Bush," with upright stalks of curious fat closed yellow blooms (and hinted at as a *Senecio*) is one of the arresting beauties frequently found. *Beleperone*, the "Shrimp Flower" adorns shanty yards. *Browallia speciosa major* is almost a weed. *Kalanchoe tubiflora* (not listed in Bailey), certainly one of the most beautiful of the *Crassulaceae* is as omnipresent, and although only 2-3 ft. tall in the open shoots to 5-6 ft. growing on a shady bank at the Botanical Gardens.

All in all, Key West is a paradise for the horticulturist as it is for the artists, writers, winter colonists, fishermen, etc. Those who look for the blare of night life and the Neon signs of Miami and the Beach will find little to draw them, but the horticultural visitor, with a comprehending view-point can fill hours and days in exploration and pure enjoyment and can have all the thrills of discovery that come with the find of each new, unidentifiable tropical plant.

Rooted cuttings of Chionanthus retusus

The Propagation of Chionanthus retusus by Cuttings

V. T. Stoutemyer

The outstanding ornamental value of the Chinese fringe tree, *Chionanthus retusus* Lindl. & Paxt. has been recognized by all who are familiar with it. This species is entirely distinct in habit from its native American relative. Though by no means new in this country, it is still rare. Unquestionably the difficulty of propagation has contributed to the neglect of this valuable ornamental.

Layering may be used (1) and grafting on seedlings of *C. virginicus* has likewise been advocated (4). Grafting on stocks of ash has been used (4), but the combination is not entirely satisfactory (2). Though this plant has been considered to be virtually impossible to root from cuttings, the success attending experiments with greenwood cuttings conducted by the writer during two seasons indicates that exceptionally heavy rooting in suitable commercial percentages may be obtained in about two and one half months, through use of a combination of certain modern developments in propagation technique. Recourse to more cumbersome and expensive methods of vegetative propagation appears unnecessary. Cuttings plotted in the fall were held over the winter in a cold sash greenhouse shelter but doubtless an ordinary cold frame would have been as satisfactory. The plants made excellent growth in the following season.

Four important requirements for the rapid rooting of this subject are: Main-

tenance of a high humidity over the cuttings, use of a chemical root-inducing substance, taking of the cuttings at the proper stage of growth, and a rooting medium of fine texture, retentive of moisture but well drained.

Maintenance of High Humidity

In a previous report (3), the author has shown that use of mechanical spray humidification increased the rooting of cuttings of this subject from 10 to 65 per cent. Several different mechanical spray devices have been used with success, but the one which gave most satisfaction in these trials was a small centrifugal atomizer driven by an enclosed electric motor. This type has been used in textile mills and for certain other industrial uses. Those who do not have mechanical installations to aid in the maintenance of a high humidity over the cuttings will need to rely on the use of closed propagating cases or bell jars along with frequent syringing of the cuttings.

Use of Plant Growth Substances

The use of synthetic growth substances is essential for satisfactory rooting of this subject. In tests which have been conducted with several thousand cuttings during two seasons, in only one instance was a cutting rooted without the use of plant growth substances. The use of a mixture of one part of indole butyric acid and 250 parts of powdered talc applied to the moistened bases of the cuttings before setting in the propagating bench has produced satisfactory rooting with little if any injury to the bases of the cuttings. This may be considered as a dosage of intermediate concentration. Similar commercial preparations are available and should be equally satisfactory. Indole butyric acid appeared to be superior to the naphthalene growth substances with this subject.

Time of Taking the Cuttings

The most favorable time of taking the cuttings of the Chinese fringe tree is relatively narrowly limited. The dates given here apply to the vicinity of Washington, D. C. and due allowances must be made for other localities. Cuttings taken between the last week of May and the first week of July will hold up well in the propagating bed without appreciable loss of leaves, but rapid and heavy rooting has been secured only from cuttings taken early in June. The influence of date of collection on the speed of rooting is shown in Table I. All cuttings were treated with the mixture of one part of indole butyric acid in 250 parts of talc. The cuttings were placed in a sand rooting medium in a greenhouse with a centrifugal atomizer, and no bottom heat was used. All counts of rooted cuttings were made on August 21.

Table I

Influence of Date of Collection on Rooting of Cuttings

Date	*Number of Cuttings*	*Per Cent Rooted*
May 20	60	0
May 27	100	27.0
June 4	40	72.5
June 23	100	5.0

These data show that the best and most rapid rooting was secured in the collection made in the first week of June. However, all of the cuttings in this experiment were in excellent condition on August 21 and additional rooting could be expected. In the previous season, cuttings taken as late as July 7 finally rooted 60 per cent although six months in the cutting bench was necessary.

These greenwood cuttings were made from long shoots of the growth of the current season, and wood from both the terminal and basal portions rooted heavily. Each cutting comprised several nodes and the basal cuts were made through a node, although rooting was not observed to have any particular relationship to the nodes. The leaves were not trimmed and as many as possible were left on the cuttings.

Unfortunately the description of the proper stage of growth for the taking of the cuttings is somewhat difficult and no satisfactory mechanical test seems to be available. The old gardener's test of snapping the stems would exclude much cutting wood which was found to root freely. The color differences of the leaves in the different collections were quite distinct and perhaps give a clue to the proper season for taking the cuttings. The collections of May 20 and 27 were a pale light green and the leaves had a thin texture. The cuttings of the lots taken on June 4 were darker, but still were definitely light green. The stems of the cuttings taken on June 23 were apparently too highly lignified for easy rooting. The leaves on these cuttings were very dark green and had a thick leathery texture. Probably only by experimentation and the keeping of careful records can the propagator determine the most favorable season for his particular locality, and this may fluctuate somewhat from year to year.

Influence of the Rooting Medium

The composition of the rooting medium is partciularly important when a high humidity is maintained over the cuttings and the bases of the cuttings are subject to damage if aeration and drainage are poor. On the other hand, an excessively coarse and open rooting medium hinders rooting. The influence of different rooting media is shown in Table II. These cuttings were set on June 4 and were removed on August 21. All were treated at the bases with a mixture of one part of indole butyric acid in 250 parts of powdered talc.

Table II

Influence of Rooting Medium on Rooting of Cuttings

Rooting Medium	*Number of Cuttings*	*Per Cent Rooted*
Sand	40	72.5
Sand (poorly drained)	140	28.0
Sand and cinders, equal parts	160	13.0
Sand and mica insulation, equal parts	160	67.0

The addition of the leached cinders hindered rooting although the drainage was excellent in this medium. Different samples of sand show quite different rooting responses under mechanical humidification. The mixture of sand and mica insulating material deserves particular mention. Although the rooting percentage was about the same as that in sand, the average rooting was much heavier with the mica. Many of the cuttings in this medium had over a dozen roots averaging more than three inches in length, a truly remarkable development. In tests with other plants no medium has been as effective as the mixture of mica insulation and sand. This material is a mica mineral which is expanded to a fluffy texture by heating in furnaces. The product is used as insulation for building and has also been sold to a limited extent for horticultural purposes, especially the amelioration of potting soils for greenhouse use. Sands

of indifferent quality for the rooting of cuttings have formed an excellent rooting medium with the admixture of mica.

Bureau of Plant Industry, U. S. Department of Agriculture

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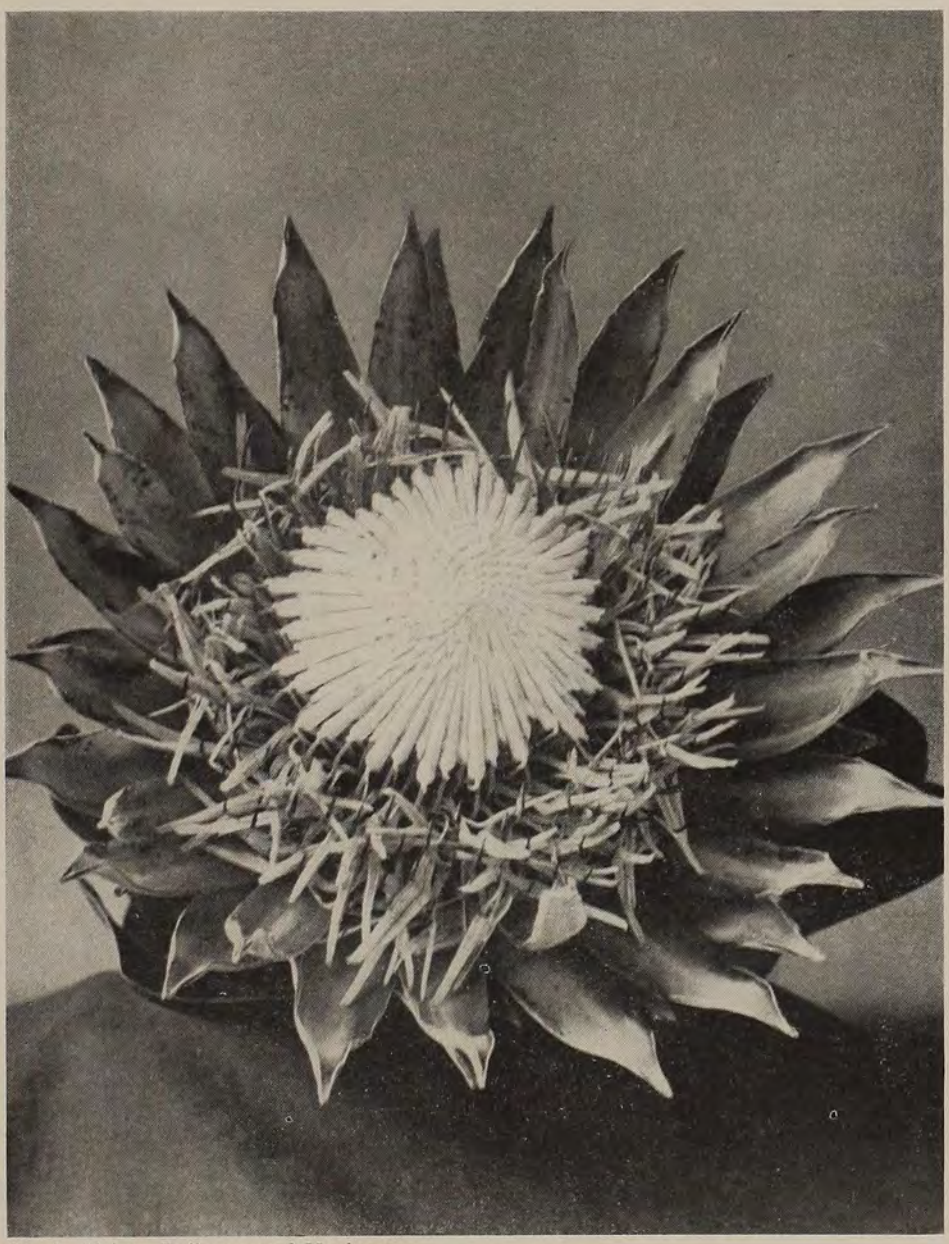
A Group of Proteads

SARAH V. COOMBS

South Africa's national flowers, the Proteas, are members of this group, which includes also many other interesting trees and shrubs. The six shrubs shown here all belong to this great Family of the Proteaceae, which has members in Australia but the largest number in South Africa. Besides the *Proteas*, there are the *Leucadendrons*, with the famous Silver Trees, the *Leucospermums*, *Serrurias*, *Mimetes* and others. The flowers have a tubular perianth, the four segments partly or completely separating. The plants are trees or shrubs, rarely perennial herbs. The flowers of many are dioecious, are usually in heads, more rarely in spikes or racemes.

Plants of this group were well known in greenhouses in England in the middle of the 19th Cenutry but were crowded out when more modern heating and watering systems were introduced. The old kiln-heated houses with their cooler temperature and less-abundant water, suited them well and more than thirty species of the *Proteas* were grown. They are reputed to be difficult to grow. Bailey says that their cultivation is not so much difficult as special. The hard-wooded ones, especially, will not endure over-much watering. They all need a cool temperature, much fresh air and sunlight. It is the belief of this writer that if these plants were set out of doors in summer in a sunny, windy place, they would approximate in such surroundings the conditions of their native habitat, where strong winds cause a hardening of their fibre. They do well in southern California, with their hardiness reaching quite far north in the state and many are grown there. The "Botanical Magazine" (t.1717, 1815) says that *Proteas*, *Leucadendrons*, *Leucospermums* and others all "delight in a composition of rather more than 1/3 sand and the rest light loam without any peat." *Serrurias*, it says "succeed best in 3 parts of peat, 2 parts loam and 1 part sand." Joseph Knight, writing in London in 1809 "On the cultivation of the plants belonging to the natural order of *Proteaceae* . . ." recommends a "light soapy loam, mixed with



South African Railways and Harbors

Protea cynaroides

a greater or less proportion of sand." What is a *soapy loam?* He also thinks it better to "chuse a spot that has never been pared or burnt."

The structure of the flower head is the distinctive feature of the family. In many species the flowers are clustered, surrounded by showy bracts. The flower heads often remain in good condition for months, adding a brilliant note to the South African landscape.

Protea

The Proteas have alternate, entire, leathery leaves. Flowers are in many-flowered solitary heads inclosed in an involucre of imbricated bracts.

Protea cynariodes L. (King Protea, Giant Protea) is one of the handsomest. Is is one of the "Suikerbosjes" (Sugar Bushes or Honey Pots) so-called because of the honey produced by the flowers when first opened. The honey is collected and made into a kind of sugar. Mrs. Bolus, South Africa's distinguished botanist, says in "A Book of South African Flowers" that there is no mistaking the identity of these flowers, whatever tint of pink the scales of the involucre may be. The color of the inner side is always deeper than that of the outer. It is the only species with long-petioled leaves. The broad blades are held out by the long petioles. The bright green leathery leaves reach five inches in length, with petioles up to five inches. The heads vary from five to eight inches in length and diameter. Though usually two to four feet in height, the shrub sometimes reaches nine feet. The name, *cynaroides* was given because of its resemblance to the Globe or French Artichoke, *Cynara*. The center of the flower is pinkish lavender. Another description (Gard. Chron. 1815) says that the flowers are disposed in a head the size of a sunflower, the bracts a lovely shade of rose-pink and the foliage highly attractive. It has ideas of its own about flowering. Marloth (Flora of South Africa, vol. 1, pp. 148-150) says that it blossoms on the Cape Peninsula in March and April and at George, about 200 miles east, in October and November.

Leucadendron

These are trees and shrubs with entire leathery leaves. They are dioecious, with the staminate flowers in terminal sessile heads, the pistillate flowers in terminal cone-like heads with woolly bracts. They are found mostly in the south-western districts of South Africa. The Silver Trees are the beauties of this genus but it contains many other interesting shrubs and trees as well.

Leucadendron salignum R.Br.Geelbos (Gold or Yellow Bush), makes the hillsides golden with its leaves or luminous yellow. The male (staminate) flowers are solitary and terminal, surrounded by several colored leaves, ½ inch long, ellipsoid; female (pistillate) flowers surrounded by several leaves, ¾ inch broad, transversely linear-oblong, rounded above, hairy.

Leucadendron cordatum Phillips. Described first in 1917 in the Annals of the Bolus Herbarium, 11.97, this plant was found near the top of a mountain in the south-west region of the Cape Province. The male flower is solitary at the end of young shoots about four inches long, which bear, in addition to the broad, ovate, rounded stem leaves, ones similar in shape and texture but bright yellow in color with red margins and tips. The flower heads are rectangular in outline, surrounded by a number of bright yellow involucral bracts. The floral bracts are yellow near the top, otherwise colorless. The flowers open from the circumference,

South African Railways and Harbors

Leucadendron cordatum

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Leucadendron crassifolium

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Leucadendron salignum

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Leucospermum nutans

South African Railways and Harbors

Serruria florida
"Blushing Bride"

yellow, soon becoming brown with age.

This species differs from any known one by its distinctly heart-shaped (cordate) leaves. It is said by Dr. Phillips to be an extremely handsome and showy plant, the bright yellow leaves surrounding the flower head, with their crimson edges, make the male flowers very conspicuous. After the flowers have faded, the yellow leaves turn green and function as foliage leaves.

Leucadendron crassifolium R.Br. was listed at first under *Protea* but later was transferred to the *Leucadendron* group. There seem to be only a few references to it by botanical authorities and it is unknown to this writer. The herbarium specimen in the New York Botanical Garden's collection resembles the picture closely as to leaves and general growth but flowers in that specimen were faded, with no outer petals or bracts showing, so it is presented here with a little hesitation. Its attractive appearance may justify its being included.

Leucospermum

The *Leucospermum* have dense terminal heads of yellow, red or orange-colored flowers, the style being generally most brilliantly colored and long. Small trees or shrubs or some trailing. Leaves usually very crowded, entire or toothed at the apex. Flowers in heads, usually solitary. Nearly all are found in the south-west districts of South Africa but they are found also in Natal and the Northern Transvaal. Flowers irregular.

Leucospermum nutans R.Br. The Broad-leaved Pincushion is a shrub about four feet high, with bright orange-flesh-colored heads. It is very free-flowering and long-lasting. One of these shrubs is a fine sight, covered to the ground with hundreds of the brilliant heads. The heads are solitary without a definite involucre of barren bracts. The styles are nearly two inches long. As the flowers develop, the styles grow and force themselves out, while the upper part and the stigma are still held in the calyx. The ever-attendant sugar birds release the stigma by their touch. This condition shows very plainly in the photograph, where the styles in the center of the head are held, the outer ones having been freed.

Serruria

Shrubs, erect or more rarely prostrate, leaves often much dissected into cylindric acute segments, rarely entire, flowers in heads, often with a small involucre of barren bracts.

Serruria florida Knight. Blushing Bride. This is one of South Africa's almost vanished beauties. It belongs to this same Family of the Broteads and is a lovely flower. It is a small shrub, two to three feet high, with large showy bracts and flowers with a rosy blush. A small group of these flowers was growing, a few years ago, in the National Botanic Garden, Kirstenbosch, near Cape Town. Except for a few plants in other places, it was almost extinct. Perhaps a larger number has been cultivated since. It would be a sad loss, if such a charming flower were gone.

Seeds of many of the Proteas, Leucodendrons and Leucospermums may be obtained from Botanic Gardens in South Africa; the modest subscription price for membership brings the opportunity to choose a number of kinds of seeds annually, ones often unobtainable elsewhere. They are worth far more than the subscription price.

A Book or Two

Field Crops and Land Use. Joseph F. Cox and Lyman E. Jackson. John Wiley & Sons, Inc., New York, 1942. 473 pages, illustrated. $3.75.

"This book is dedicated to the growing army of American farmers who plan and execute their programs of efficient crop and livestock production so as to improve the fertility of the soils in their charge, provide for the Nation's needs during times of peace and war, and assure the onward course of our country toward ever-increasing prosperity and enhanced freedom."

This is followed by a foreword by Secretary of Agriculture, the Honorable Claude R. Wickard, dated April 4 of this year.

This is a reference book, compact and succinct in spite of its length. Its purpose is to set forth in an easily understood fashion the current practices that lead to the best agricultural practices. It is tinctured at times by many expressions of opinion which are distinctly of our times, but since our times are setting the immediate pattern of the time to come, no one may cavil at this. To those who are not farmers it should be required reading for our national understanding: to those who are farmers, it need no recommendation from us.

The Nature and Prevention of Plant Diseases. K. Starr Chester. The Blackiston Company, Philadelphia, 1942. 584 pages, illustrated. $4.50.

Like the last, this is a reference book and like the last it is colored by our times. It is written to read and used not only by the student but by the intelligent, progressive individual for whom farming is life. That it should appear at this time, when the success of our agriculture must be related not only to ourselves as a nation but to the world, may or may not be significant, but its appearance is opportune.

Ornamental American Shrubs. William R. Van Dersal, Oxford University Press, New York, 1942. 288 pages, illustrated. $4.00.

This is a most interesting book. Whether one agrees with it, from "cover to cover" makes no particle of difference. The author has travelled widely, photographed endlessly, made notes even more abundantly and has not suffered too much, from sitting in libraries to the exclusion of all else.

There are many species noted here, that the reviewer would not consider having in a small suburban garden where one's pleasures must be carefully chosen, but were the garden large enough, none would be omitted that would survive the climate; since soil can be managed more easily than weather.

The next is easy reading, designed for persuasion toward planting rather than to impress for profundity of erudition—but there was no lack of care in the preparation of the material and the captions will not find anything to merit their efforts.

Succulent Plants of New and Old World Deserts. E. J. Alexander, New York Botanical Garden, New York, 1942. 64 pages, illustrated. $.50.

This is a very pleasant booklet, in which are brought together with some

additional material, several articles that have appeared in the *Journal of the Garden*. The photographs are numerous and delightful; valuable moreover since they serve to emphasize the particular beauties of succulent plants, their amazing structure architectural in quality and style, as well as the equally amazing contrasts in substance, delicacy opposed to harshness, smoothness opposed to spininess; translucency opposed to opaqueness.

The illustrations in no way overshadow the text which is straightforward and clear, although naturally reduced because of the planning of the 64 pages. One could have wished for more text in many places although one can equally well understand the reasons for brevity.

Meet the Natives. M. Walker Pesman, Author's edition, 372 S. Humboldt St., Denver, Colo., 1942. 216 pages, illustrated. $1.25.

The author speaking: "Just between you and me—don't buy this book if you know too much. This is not a book for botanists . . . The purpose of this book is to make it easy to become acquainted with the widespread, the conspicuous, the beautiful and interesting trees, shrubs and wildflowers (herbs, technically speaking)" All of which is "fair enough."

We don't know "too much" but it is the sort of book we don't really like but would undoubtedly use! Everything possible has been done to make it easy for the simple-minded but eager flower lovers. Perhaps it is only innate snobbery but to find all the notes about red, pink and reddish purple flower on pink paper, those for blue and bluish-purple on blue paper, etc., rather rubs in by ignorance, be like the pictures—an admission that should complete our condemnation.

The Gardener's Pocketbook

From the Midwestern Horticultural Society

Gentians

Most people in this region are familiar with two of the native gentians. One is the rather common closed genitian (*Gentiana Andrewsi*) and the other is the rarer fringed gentian (*Gentiana crinita*). A third is still harder to find but more attractive than the others, it is the Prairie gentian (*G. puberula*) which has open flowers like the fringed but a habit of growth like the closed.

The fringed gentian is notoriously difficult to handle as it is a biennial. The Prairie gentian resents disturbance and so far efforts on my part to cultivate it have been conspicuously unsuccessful. Fall and spring transplanting, with and without ball, have not produced any results than a gradual decline of the plant. The closed gentian although much more roughly treated has always responded with good growth and flowers.

The closed gentian is a plant for the wild garden or the perennial border. It is at home in any good loam and may be easily transplanted from the wild. Its bright blue flowers when seen in a group on the plant are strikingly beautiful. It is one of the perennials

Claude Hope [See page 196]

Viola Striata

that finishes the season in the garden with as much brilliance as the Spring bulbs which start it.

ELDRED E. GREEN.

Corylus avellana

In places where a tall shrub can be used the European Hazel, *Corylus avellana* may well be considered. In this locality the plant will reach a height of about sixteen feet with an arching spread nearly equal to the height. While this is unmistakably a hazel in the leaves and catkins and fruit, yet the tall growth and strong stems keep it from being a straggly thicket-former of the native species.

I have seen this species used as a canopy over walks and as tall background material. In bold plantings or perhaps in a large woodland grouping this is one of the tall shrubs that has been overlooked.

Plant geographers have repeatedly emphasized the close affinity between the floras of the northern parts of Europe, Asia and America. In the hazels, species are found in all three of these continents, with the Asiatic forms being slightly more difficult in culture due to greater diversity in their native habitat.

ELDRED E. GREEN.

Goutweed

It seems rather superfluous that a writer should have to call attention to this old-fashioned plant. However, I have seen instances where well trained florists did not know the identity of the plant when shown them. It is one of the plants that is not too commonly seen around here, but wherever it is, it always attracts much notice and favorable comment especially when seen in the variegated form.

Technically the plant is known as *Aegopodium Podagraria*. It is a low growing rather coarse-leaved plant that has a creeping underground stem. This stem produces wide spreading branches that soon form a mat. The plant is a member of the Carrot family and the flowers are in small umbels that show a close resemblance to the wild carrot. The foliage could easily pass for a diminutive spreading parsnip plant.

The plain form has nothing to recommend it except for a different mat in partial shade. The variegated form is decidedly attractive as the margins of the leaves are a clear white that stands out well. As a white border it is excellent. My first and most vivid recollection of this plant is in a garden where it is used as a border for flaming Oriental poppies.

Culturally the plant is not fussy. Any ordinary soil with half exposure or better is all that is necessary. An occasional edging to keep the spreading stems in bound is all that is needed. The plant is easily propagated from these side stems.

ELDRED E. GREEN.

Acer glabrum Torr.

Several years ago while vacationing in Colorado in the Pike's Peak district, where according to Theodore Roosevelt the scenery bankrupts the English language, and the vegetation is equally fascinating we used to enjoy the hike up the Peak, walking up the cog-railroad to the Halfway House. If I may digress, we find walking in the mountains not as fatiguing as in the lower altitudes. As a boy the writer on one occasion walked from Cripple Creek, during the Gold Rush, before the little town was a year old, to Colorado Springs, a distance of thirty miles without being tired.

Claude Hope [See page 196]

Puschkinia scilloides

Near the timber line on Pike's Peak we found *Acer glabrum* growing as a dwarf shrub, full of seed, usually not more than four or five feet in height, though probably centuries old. On one occasion we gathered a pocketfull of seed and mailed them home to Houston where they were planted in the greenhouse and germinated quickly. Some of them have grown into magnificent specimens and adorn some of our finest homes assuming the form and proportions of the sugar maples so popular in the North. Strange to say the latter (*A. saccharum*) is a complete failure here and the silver maple (*A. saccharinum*) does so poorly it is of no value, while *A. glabrum* is of rapid growth, in comparatively few years having attained a diameter of 16 to 18 inches and a well-rounded top 30 to 40 feet in height. It seems to be immune to insect attack which affect other maples, colors beautifully in the fall and seems admirably adapted to the soil and climate of the Gulf Coast Region.

This seems to prove one of these remarkable instances where a "transplanted product" thrives so well in a completely different environment. Its dwarfed habit does not affect its development, as is the case with so many conifers, when given an opportunity and where few trees from the high altitude survive. Our late friend, T. V. Munson, of Denison, Texas, one of the pioneer nurserymen told me many years ago, those conifers such as the beautiful Colorado Blue Spruce, *Picea pungens* would not survive south of the Red River which we found true after much experimentation, but isothermic lines do not seem to mean anything to *Acer glabrum* which well deserves a foremost place among our ornamental trees.

EDWARD TEAS.

Houston, Texas.

A Few Ozark Wild Flowers

The beautiful red *Pentstemon eatoni* is the only member of that royal American family of lovely flowers which I have ever seen or grown that anywhere near equals the Ozark Pentstemon. It is classed as a variation of *P. cobea*. It is true it has the shining leaves of *cobea*, also its habit of growth, but otherwise it is so different that it surely deserves a distinct name of its own.

The flowers are larger than the ordinary *cobea* but the same shape, though without marking. They form big, heavy heads, with, in an old plant, many stems. Their color is something seldom seen in either wild or garden flowers and hard to describe, being a glowing rosy purple and yet not purple, either, as the blue cast is missing; maybe a glorified magenta might come nearer. I hesitate to give that color-rating, however, for that much maligned color is death to the popularity of any flower, no matter how good, to some gardeners.

There are so many breath taking groupings of the wild flowers here in the Ozarks that one can scarcely make that statement about any; still, when we drive along and find these pentstemon growing in a thick, natural planting against the trees, at the roadside, it really has that effect. This Beardstongue is not too common, as in our wanderings over pretty much of the northwest part of the state we have encountered it in but two localities, but where found, it usually is in good sized colonies.

There is nothing lovelier, it seems to me, until I see a bank covered with a soft blue carpet of the big flat beauties of the Birdfoot violet, *V. pedata*, or, scattered beneath the oaks, gleaming, rosy *Phlox pilosa*, starred all through with clumps of the vivid stars of *Silene*

virginica. Or to find in the early spring, under a grouping of snowy white dogwood, a carpeting of equally white bloodroot, mingled with rue anemone in white and pink, above its ruffles of dainty leaves.

Then, in the later summer along our little spring-branch, the dwarf blue lobelia makes a picture that delights the eye, even of those who claim to sniff at "just a wild flower." This is seemingly identical with *Lobelia syphilitica*, except in height, which does not exceed eighteen inches. The stems are clothed for the greater part of their length with the gentian-blue flowers lasting for days, to be replaced, as they fade, by new buds formed at their base. This makes a long display. I found one small stem in bloom at Christmas time last year.

Two really blue, tuberous-rooted delphinium come into bloom about with the phloxes, one coming on just as the other finishes, and disappear almost as soon as out of bloom. Both are pretty and quite worth while.

The wild Sweet William, *Phlox divaricata*, in shades of lavender, blooms along with *P. pilosa* and is always lovely. These flowers are all easily adapted to garden culture, but there is another grand silence that I have not been able to handle either in plant or seeds. We have never found but a few of this silene. It has much the same wide scarlet stars and the characteristically sticky foliage of *S. virginica*, only blooms later in the season and is a much larger plant, growing its many stems in a stiff, upright form, whereas *S. virginica* throws its stems out more or less horizontally, in a loose, open formation. Both are grand plants. In cultivation *S. virginica* continues to bloom for weeks, much longer than in the wild.

The wild verbena is a gorgeous sight anywhere one may find its solid mats of color but has proven a disappointment in the garden. While it is of the easiest culture and can be successfully brought in, even in full bloom, still the nature of the plant seems to change, even though it is only moved a few feet into identical soil. It apparently loses its flowering ambition and sprawls around, giving numbers of lovely rose heads of bloom, it is true, but nothing like the delightfully dense flower mass of its wild state. I wish I could make you see one glorious grouping of this flower as we saw it this spring. Just beyond the fence, at the edge of one of our little fields, there were many mats of it growing among the scattered oaks and cedars. Most of them in full sun, but many were snuggled up under dense cedars where they only received an hour, probably, of sun during the day, but every plant so completely covered with the low compact flower heads, it seemed like one big bloom. That was one of the loveliest pictures a lover of pink and rose-colored flowers could ever see.

I like the tall, 14 to 18 in., Sept.-Oct. blooming *Allium* which we find here, though am not sure of its identity. It has large heads of soft, rosy blooms, the flowers comparatively large and comes, too, at a good time, when wild flowers are scarce.

The pale blue camassia that blooms with the phloxes is good, too. I have never liked this flower until this spring. It might be the beautiful natural setting added to its attractiveness for I have grown it years ago and thought it rather insipid. I have planted some with a good pink shade of the wild geranium, the same companion with which it was growing in the woods, and am expecting it to be at least worth keeping.

Mrs. H. P. Magers

Greygates, R. 1,
Mountain Home, Ark.

Massonia pustulata Jacq. [See page 195]

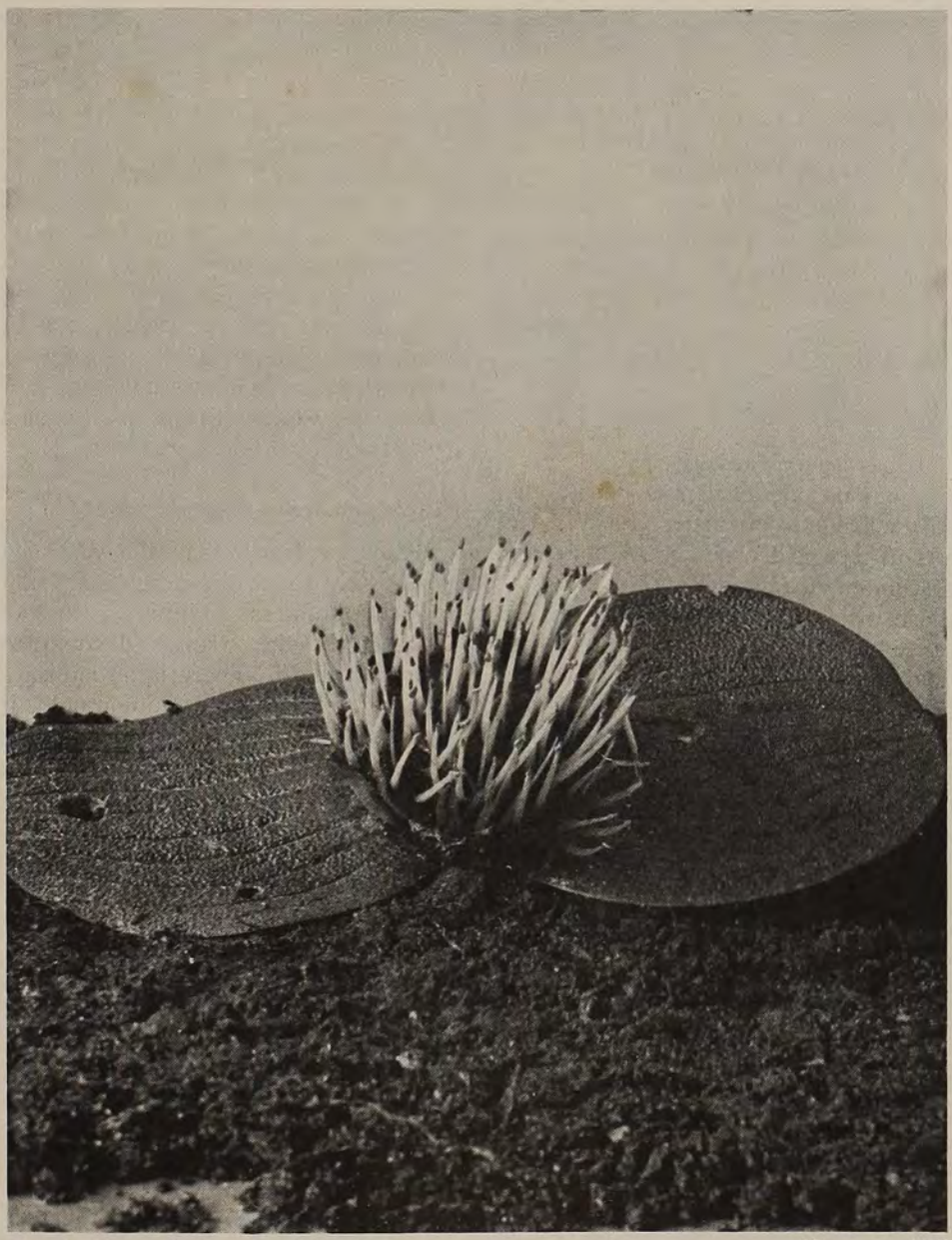
Redouté in "Les Liliacées" (Vol. IV, Pl. 183, 1808) speaks slightingly of this odd little South African plant. He says (roughly translated) that it presents neither the brilliancy of color nor the elegant appearance of most of the members of the lily family and that one could hardly believe, at first glance, that it could belong to the family, if all the necessary characters did not indicate its relationship. In spite of the apparent finality of this crushing description, we still affirm that the plant has a certain modest charm. Its two queer deeply-grooved and pustulate leaves, its greenish white flowers in a sort of cup effect between them and its prominent stamens make a combination appropriate in itself and one rather alluring to the possible grower.

An article in "The Gardener's Chronicle" (ser. III, 39, page 44, 1906) calls it "this very curious and interesting plant" and states that it had received a Botanical Certificate from the Scientific Committee of the Royal Horticultural Society at its last meeting. Though not rare in English gardens, it is said not to seem to have been found wild since it was first seen by Masson, the collector, over a hundred years ago.

Describing it in the "Botanists Repository" (Vol. IV, Pl. ccxx, 1802) under the name *Massonia scabra* Thunb. (this name being a synonym), Andrews says that it was introduced into England in 1796 and flowered for the first time there in 1800. He calls it a hardy greenhouse bulb, propagated from the root and seeds, flowering in England in February and March, losing its leaves in June. The roots, he says, should not be taken from the pots after the decay of the leaves but kept rather dry till the leaves begin to reappear. Much evidently of sarcasm and criticism is included in the following quotation, though almost one hundred and forty years later, the exact point escapes us: "Much will it contribute," he says, "to the illustration of science, to find our present figure, when copied into a certain magazine at some future period (and of which we have no doubt), specifically denominated smooth-leaved; as unfortunately, the other species figured by us, Pl. 46, Vol. I, with obovate, blunt- ended or spathula-shaped leaves, has been, by certain hocus-pocus conjurer, and *our very good friend*, converted into sword-shaped! *risum teneatus.*" I wonder who the villain was.

The plant belongs to a genus of the Liliaceae. The genus, Dr. Pole Evans says in "Flowering Plants of South Africa" (Vol. II, 1922), is very imperfectly known, as about 24 out of the 33 species described in the "Flora Capensis" (Vol. VI, page 408, 1896-7) have never been collected within the last fifty years, or are only known from figures in botanical publications. Bailey, "Standard Cyclopedia" (Vol. II, page 2010, 1935), describes them as allied to *Allium;* rarely grown as pot plants in the greenhouse. They have two or three broad opposite leaves a very short scape, so that the usually white or greenish flowers are borne in a sessile or nearly sessile globose head at the surface of the ground surrounded by several membranous bracts. *Massonia pustulata* has an ovoid bulb, one inch in diameter, ribber tuberculate broad-oblong leaves and greenish flowers in the cup of pustulate foliage; perianth tube cylindrical, the segments narrow and spreading; stamens long and upstanding.

In the "Botanical Magazine" (Vol. 17, tab. 642, 1803) it is called the "Shagreen-leaved Massonia" from its leathery thick leaves, set with small conical tubercles in the manner of the untanned leather known as shagreen.



South African Railways and Harbors [See page 194]

Massonia pustulata

The tube of the corolla is filled with a clear nectar-like liquid, which rising above the brim, adds to the singular appearance of the plant. Marloth illustrates it, in "The Flora of South Africa (Vol. IV, Pl. 23, 1915).

A warm greenhouse temperature with plenty of water in the growing season, and little or none during the resting stage, seem to be indicated.

SARAH V. COOMBS

Scarsdale, New York.

Viola striata [See page 189]

It has been a rather general observation among our gardening friends that the inclusion of our native Eastern violets in the garden is a moot point and that all may be divided into two camps: those who will have none of them because of their prodigality and those who do, whether for reasons of choice or of inertia.

Many years ago a few plants of *Viola striata* were brought into the garden together with plants of *Phlox divaricata,* both abundantly native in our Potomac River valley in those parts to their liking, and it still remains uncertain as to which has been more prodigal in repopulating the earth. Each year at blooming time the creamy masses of the violet and the lavender haze of the river phlox soften the heart and confirm us in our inertia.

Like many native violets, this starts into growth early in spring with fat tufts of leaves and short stalks that do not suggest the height to which they will attain later. The photograph is taken at that stage and gives a good idea of the freedom of bloom. Later this abundance is less apparent as the developing stems carry the plant upwards, perhaps to a foot or more, flowering from almost every axil (and seeding as well), through a long time.

The petals are broad, creamy in color, with dull violet striations, particularly in the lowermost. There is no appreciable scent.

Here it grows too well and too widely, caring little as to whether the location be in sun, half shade or shade: in sandy gravel path, the ordinary clay of the hillside or the deeply worked beds prepared for humus-loving species. It may be transplanted at almost any season and has gone out into other gardens, always with the warning that it will not stay put, a warning not always heeded by those who see it for the first time in the way Mr. Hope has recorded it for the illustration.

Puschkinia scilloides [See page 191]

Better gardeners than I have had a word to say about this delightful spring flowering bulb that so often has to take its place in the chapter devoted to "Minor Bulbs." There is no gainsaying the fact that it is a minor bulb, if one is talking of size, or if one speaks of its occurrence in trade, but surely it is no more a small fry than *Scilla sibirica,* which any gardener knows and which he can buy (or could buy) without much ado.

It must be admitted, of course, if one may judge by its performance here, that it does not self-sow with the abandon of that species and seems less inclined to make offsets, all due, perhaps, to the rather offhand gardening practices to which it must submit itself on my overgrown and overly shaded hillside.

If there is any virtue in the clump recorded here, it lies perhaps in the fact that the bulbs were raised from seed, a needless task but one that took its part in a time when curiosity prompted me to raise a considerable number of bulbs from seed to prove to myself the ease or difficulty of the procedure.

As to difficulty, there is none save that of getting the seed. Whether these were begged or bought is not remem-

Claude Hope [See page 198]

Magnolia stellata × *Kobus*

bered, but the seeds were put in a small pot and given the same treatment in the cold frame that was given to the annual crops of daffodil seeds. Germination came the following spring and after two years in a pot, the bulbs, then the size of a fat pea, were put out in the open ground. Two years later the flowers came and each year since have bloomed as shown.

The color at a distance is nearly white. Close by the tinted white shows that faint greenish-blue wash and the deeper greenish-blue marking that separates it from all its spring-blooming companions, save possibly *Scilla tubergiana,* which is no competitor, since it flowers much earlier in the year, so early often that it is caught by a late frost.

Now that each gardener should and perhaps may regard each "minor" plant as a garden treasure to be safeguarded against a happier time, others may be moved to sow a seed or two. Native of Asia Minor, it is patient of heat and cold, of dryness and of spring rains; it should find a wide usefulness for most of us.

Passiflora incarnata [See page 169]

Within the last few years, the passion-flowers have been illustrated in several species and in 1938 Miss Jones had a note of this in her article on Vines for California. Among the various species and forms possible there, this cannot be considered as one of the best, but for those who cannot garden in such climates as California provides, it is not too poor a representative of the large and mostly tropical genus.

To quote Bailey's Cyclopedia, "A weedy plant but offered by dealers in native plants. With protection, the roots will survive the winter as far north as Baltimore, and the strong herbaceous vines make a fine cover for arbors and verandahs. Easily grown from seeds." This is faint praise and properly damning within limits, if one recalls the more brilliant flowers of the tropics.

From another point of view, there is something to be said for it. Planted in poor soil, not so rich as to stimulate luxuriant growth but not so poor as to stunt it, the plant can be used with shrubs, scrambling over and through them in the same fine way that some clematis species drape the roadside. It has also been observed growing flat over the ground like an unwilling ground cover.

As can be seen from the picture, the circle of tortuous fringe with its faint zones (or halos) of purplish color overshadow the calyx parts beneath.

Someday, perhaps, some Californian with pollen of more brilliant species at his disposal may trouble himself to fertilize this plant and rear a host of seedlings some few of which may give us a combination of the relative hardiness of *incarnata* with the brilliance of the more southern species and then?

Magnolia stellata × *Kobus* [See page 197]

The branches from which the picture was made came from a plant layered from a seedling raised by the late Dr. Walter Van Fleet more often recalled in connection with roses, but really a plantsman with wide and varied interests. The story of the crossing given was that a pink flowered form of *stellata* had been pollinated by *Kobus*. Among the ten or twelve seedlings existent at the time the garden was known to me, there was little variation either in habit or flowering and no individual with rose-tinting in the blooms.

The original trees are no longer available for observation but those from layers have grown well, now twelve to fifteen feet in height with no suggestion that they have finished their

Claude Hope [See page 200]

Aesculus parviflora

growth. Each spring, a little before the time when the Soulange magnolias are flowering, and at about the same time as the reputed parents, the trees are covered with their starry flowers.

As compared with *stellata* the plant is slower in coming into flower, which fact, together with its more treelike habit, may tend to confirm the story of its origin.

As to whether or not its beauty is distinct enough to lift it above its parents, each of them sufficiently fine in themselves, one hesitates to say; but whether in flower or in leaf, or later when its orange to scarlet coated seeds are greedily and prematurely eaten by the gray squirrels that overrun the hill, it is a fine thing and a happy reminder of a great gardener.

Aesculus parviflora [See page 199]

If one were to succumb to the modern passion for bibliographic lists, it might be found that this American shrub native to our southeastern states would make a brave showing, since it has been known in cultivation since the end of the 18th century.

The present note need not be added to that list since it has but one purpose, to reiterate the usefulness of this summer-flowering shrub in shady but not really dark situations.

The photograph shows clearly enough gross details of both leaf and inflorescence and suggests the denseness of the accompanying growth which overshades our plants from noon till sundown.

In one of the parks in Washington, D. C., which is essentially an open wood with trees high enough and clear enough to permit grass beneath, but closely enough planted so as to suggest a grassy wood and not a lawn with trees, this plant has been used in groups which almost every year are covered with these spires that become longer and more fringe-like as all the flowers open.

Here little seed is developed but if one finds seed, it is well to plant it forthwith, so that the tap root may form the same autumn and the shoot come up the following spring in its own leisurely fashion.

Correction

Mr. Wyndham Hayward very kindly points out an error in Mr. Balls' article, which we hasten to say is ours and not Mr. Balls', namely the mention on page 153 of *Pamea* instead of *Pameanthe*. Our thanks to Mr. Hayward and our further apologies to Mr. Balls.

The Lily Slide Committee of the American Horticultural Society has assembled and offers for rental to Garden Clubs and other groups, Kodachrome Slides of Lilies. These have been arranged in two sets, one for the beginner in lily growing, showing cultural practices and lilies easy to grow; the other, for the more advanced grower, is a general collection of lily pictures.

For full description and terms of rental, please write to Mrs. Joseph G. Walker, Woodberry Forest, Virginia.

American Plants

In many of the issues of the magazine during the last few years, there have been notes from our Director, Mrs. Henry, that have reflected her interest and activity in collecting native plants in various parts of the United States, of late chiefly in our South. These have dealt not only with the rediscovery in a horticultural sense of plants long known to botanical science, but also with the discovery of individual plants that showed variation from the norm of the species, of sufficient interest to bring them into vegetative cultivation.

Fortunately for us, these days have not been buried forever in Mrs. Henry's own garden from which they left the world through her generous gifts. The Upperbank Nursery of Media, Pennsylvania, has taken over the stock of many of them, propagated them and has just issued a catalogue of those that are available for the gardener who wishes a vicarious share in her journeyings. The list is imposing both in number and in kind and merits the attention of the gardener who concerns himself with his native flora, the same sort of concern that prompted Dr. Van Dersal to write the book reviewed elsewhere in this issue.

Doubtless due to the limited nature of the original stock and to certain difficulties in propagation, the prices are not those of ordinary plants, but this need not deter one, since it means only that he must prolong the pleasures of purchase over more than one season, during which time the propagation can go on and prices tumble.

In all gardening history there have been times when the garden world was enriched with the flora of special areas, and one of the pleasures of library browsing is always that of noting the introduction of plants from the different parts of the world. To cite a single example, Curtis Botanical Magazine, as a constant reflector of the historical introduction of plants, is quite enough. Although this journal does not always win for itself the complete admiration of taxonomists, it does give a passing picture of the times and points out the change in interest in the British gardening public, which successively had the privilege of many plants from the four corners of the globe.

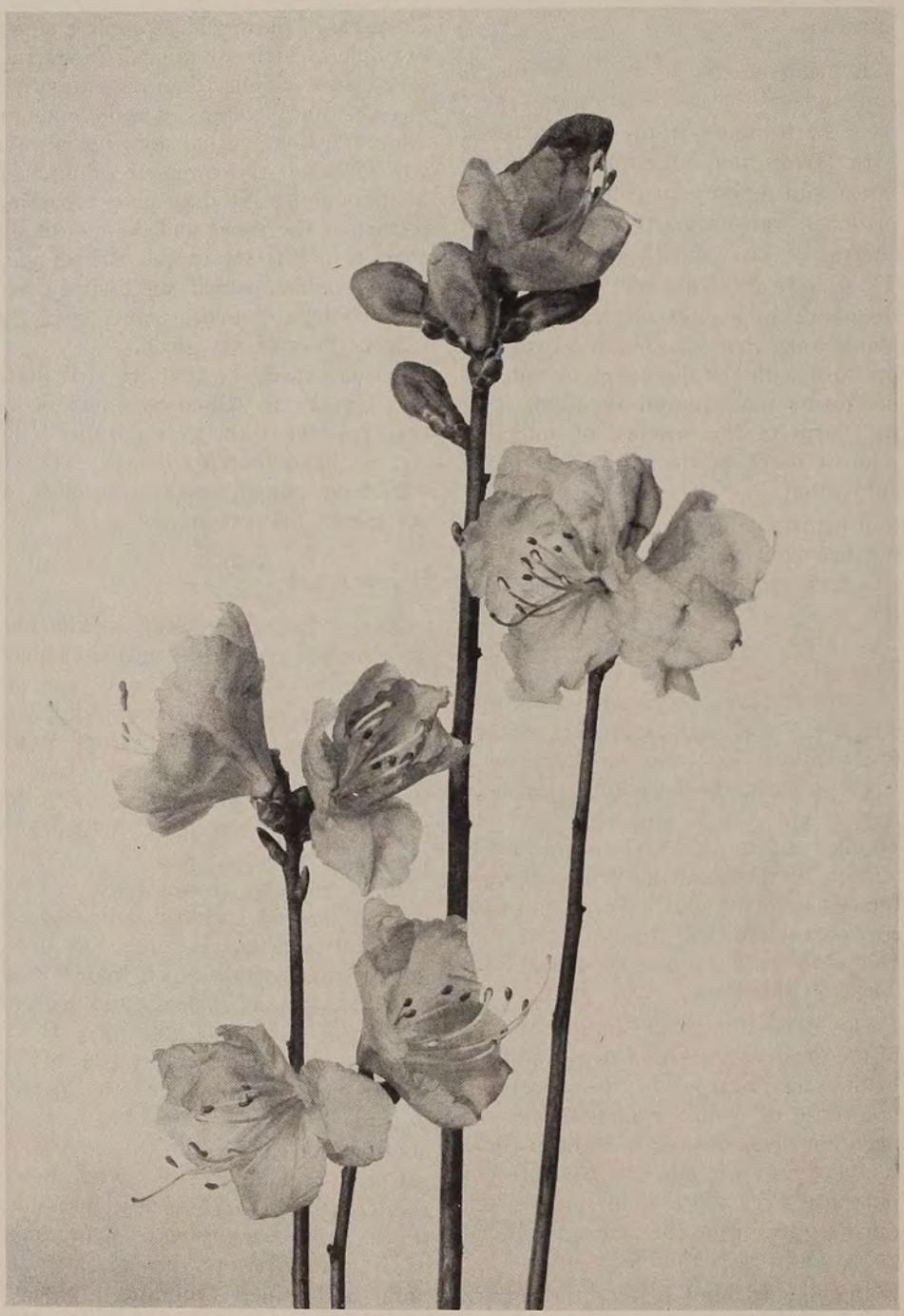
It may easily be that we shall have now an era in which we shall be as keenly aware of the riches of this country, as have been gardeners overseas who have sometimes known more of our plants than we ourselves.

Wintersweet

Each turn of the year, as the outdoor picture changes from the richness of autumn to the period when one can appease his garden hunger only with the plants he may grow indoors, or the static beauty of nature in her time of sleep, there are a few plants that offer their period of bloom, no matter how unnatural it may appear.

With perhaps tiresome repetitiousness, it may be mentioned that to the beautiful witchhazels might be added the Oriental wintersweet, known both as *Chimonanthus fragrans* and *Meratia praecox* in gardening literature. It has been mentioned here before and various plants have been bought and planted as a result of such notices but it is still not common.

Closely related to the sweet-shrubs (*Calycanthus spp.*) which it resembles superficially in many ways, it produces its fragrant flowers through late autumn and winter, running the usual race between frost and freezing that decides the fate of so many plants that tempt the end of the season. Further south, this hazard is not so great, but it is to be supposed that there too it



Lilian A. Guernsey

[See page 203]

Rhododendron mucronulatum

may be caught at times and miss its flowering.

Unlike the sweet-shrubs which all have brownish flowers, this has yellow blooms with petals of a more translucent texture, the innermost marked with dull red. Its distinction, however, lies in its scent, which always reminds me of the old Chinese tazetta narcissus that meant the Chinese New Year Season in our parts, a scent that is both heavy and acute if one will permit such a seeming paradox. The one apparent necessity in bringing it into the house as a cut flower is to temper its transition from the cold outside to the heated house, by a period in a coldish room. Some of the open flowers and some of the smaller buds will fall, but enough will last to make it a pleasure for days, even if the homely coloring will not, cannot compete with berried sprays nor late chrysanthemums.

There is some variation among the plants known here, both in the degree of yellowness and in the time of flowering. Curiously enough, the one plant that always has flowered in November has never borne a seed-pod, while some that never have opened before late December often have a few of the curious fruits that at first sight suggest the cocoons of the great Cecropia moths. Some day, perhaps, a patient gardener who lives where seeds may be had, will raise a great quantity from them and choose the individuals that offer the greatest range of variation for the benefit of winter gardens.

Rhododendron mucronulatum [See page 202]

Like the last shrub, this too has been mentioned in the magazine more than once, and while it cannot be considered with any safety as a winter-flowering shrub, it falls into that very useful category of shrubs which go into the winter with all their flower buds fully formed and perfectly ready for the first warm days of Spring. Here, near Washington, it is frequently beguiled in midwinter by our uncertain warmth in unfolding its flowers which normally should compete in the season of forsythia.

The shoots from which the photograph was made were taken from youngish plants that were still busied in growing up to form the structure of the shrub and had not yet branched out into the mature twiggy form of the mature plant. They should not be considered therefore as meaning that the plant is always stiff and graceless. Far from it.

When first introduced there were plants available of the related *R. dauricum* from which this plant differs in minor ways in the gardener's measure. Of late this plant has been the more common, but as it does not come from cuttings with the ease that characterizes so many azaleas and some rhododendrons, its propagation by seed has not been as general as it well might be. If the seeds are sown on sifted sphagnum moss and grown on, following the technique indicated in recent papers in this journal, there is little difficulty in getting a goodly progeny in short order and the young plants grow quickly and flower when quite young.

It is remarkably hardy to cold and reasonably patient with summer droughts. If it has any marked dislike, it would seem to be against overshading which reduced the vigor of growth and the resultant flowering, as well as the brilliancy of autumn color, one of the features that makes it useful.

As is probably recalled, its flowers though often described as rose-purple are of that color that loses the purple when planted where light shines through them, and still more, if underplanted with flowers that are truly purple or violet.

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Figures in *italics* represent illustrations

The American Horticultural Society

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

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

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

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

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