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THE COVER
THE CHRISTMAS ROSE
Original drawing by Polly Steele
(See Page 279 for Cover Story.)

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Editor
T HE NATIONAL COUNCIL of Garden Clubs is a federation of garden clubs from 47 states and the District of Columbia. For the past 32 years the National Council has had a bird program and now all the affiliates have a Bird Chairman supporting that program.

The National Slogan is “Every Garden a Bird Sanctuary” and Colorado, being a member of this federation, with 119 clubs, has adopted this slogan as one of its objectives. Of the Colorado clubs, 65 have bird programs which include the following suggestions: every club member should learn five characteristics of the Colorado State Bird, the Lark Bunting; each member should learn to identify five new birds each year; each member should be alert to the dangers of the misuse of insecticides and work for pesticide legislation; each member should support all legislation that will aid in increasing bird-life and conserving habitats; and each member should try to make every garden a bird sanctuary.

PLANTING THE BIRD SANCTUARY

Some thick shrubs, a tall tree and an evergreen, either a pine, spruce or juniper, are an excellent start for a bird sanctuary. Other shrubs and trees attractive to birds may be planted later, space permitting.

SHRUBS

In selecting shrubs, the viburnums should be considered as they are easily grown and produce fruits liked by birds. Especially desirable is the American cranberry bush viburnum, Viburnum trilobum, which grows from 8 to 10 feet high and produces bright red fruits (*drupes). Another is the

\*Editor’s Note: The names in parentheses represent the correct botanical nomenclature for the fruits under discussion.

nannyberry viburnum, V. lentago, which is a tall shrub with very beautiful autumn foliage and blue-black fruits (drupes). The American elder, Sambucus canadensis, has purple fruits (drupes) which are good for pie or jelly if the birds do not get them first. The golden currant, Ribes aureum, has fragrant yellow flowers, black to purplish fruits (berries) and colorful fall foliage. A good background shrub is the rosy Tatarian honeysuckle, Lonicera tatarica rosea, which grows to a height of 15 feet and has deep pink flowers and attractive red fruits (berries) which make good bird food. Lonicera morrowii, Morrow honeysuckle, grows 8 feet tall and has creamy white flowers in May and yellow or red fruits (berries) from August to late fall. The pin or bird cherry, Prunus pensylvanica, is a neat and attractive native shrub which has fragrant white blossoms and tiny bright red cherries in the summer. The handsome firethorn, Pyracantha coccinea lalandii, is worth trying. It produces orange-red fruits (pomes) that are enjoyed by the waxwings. The Peking cotoneaster, Cotoneaster acutifolia, grows about 6 feet tall, has small glossy leaves and attractive black fruits (pomes) that hang on all winter. Another cotoneaster, C. horizontalis, is a low-growing evergreen shrub covered with scarlet fruits (pomes). The European privet, Ligustrum vulgare, if not clipped, produces black fruits (berries) that the waxwings and other birds like.

The Japanese or multiflora rose, Rosa multiflora, is usually covered with small, red, oval fruits (hips) that birds enjoy. If there is room for a wild tangle, let some blackberries and raspberries, Rubus spp., grow wild and undisturbed. All birds love a thicket.

VINES

Some vines provide bird food but should not be planted near bedroom windows, unless one is an early riser. The Virginia creeper, Parthenocissus quinquefolia, has blue fruits (berries) which are eaten by many birds. Birds are also attracted by wild grapes, Vitis spp. The trumpet vine, Campsis radicans, is attractive to the hummingbirds and they also like the everblooming honeysuckle, Lonicera heckrottii. The American bittersweet, Celastrus scandens, has orange colored seeds that are eaten by winter birds. It is hard to get established but once under way it does well. Be sure to plant three to insure pollination.

SMALL TREES

Hawthorns, Crataegus spp., are beautiful small trees. They have lovely blossoms, brilliant red fruits (pomes) and thick, thorny branches that offer ideal locations for nest building and which afford protection from cats. The fruit (drupe) of the chokecherry, Prunus virginiana demissa, is eaten by several species of birds. The fruits
sylvestris), ponderosa pine (P. ponderosa) and Douglas fir (Pseudotsuga taxifolia). All of these large evergreen trees are good for shelter and the Evening Grosbeaks eat their seeds. The common hackberry, Celtis occidentalis, is a good tree for Colorado. It is a slow grower, comparatively disease resistant and has dark purple, sweet tasting fruits (drupes) which are a favorite bird food. The Siberian elm, Ulmus pumila, is a fast growing tree but is subject to wind and snow damage unless properly trimmed. This spring its heavy crop of fruits (samaras) was enjoyed by a large flock of Evening Grosbeaks. The green ash, Fraxinus pennsylvanica lanceolata, is a tree of good shape, disease free and has beautiful autumn foliage. This fall it was heavily laden with fruits (samaras) which were eaten by the House Finches.

HERBACEOUS PLANTS

No garden would be complete without herbaceous flowering plants to add fragrance and a touch of color. In addition to these benefits, many varieties are also a source of bird food. The hummingbirds are attracted by the flowers of the honeysuckle and trumpet vines, by petunia, phlox, gladiolus, red gilia (which is a biennial and must be allowed to reseed in order to insure continuous blooming plants) and the bee balm, Monarda spp., which has been called their “ice cream”.

To attract other birds, select a special spot that need not be trimmed or cleaned away for the winter and sow cosmos, sunflowers, fall asters (Michaelmas daisies), hollyhocks and brown-eyed Susans (Rudbeckia triloba). It is sheer joy to watch yellow and black goldfinches perched atop a fall aster, busily eating the seeds. Two species of the goldfinches, the American and Lesser, are fall visitors. The chickadees and House Finches will find the sunflower seeds.

FEEDING AND WATERING

In order to attract migrant and winter birds to the sanctuary, give them food and water. If feeding birds for the first time, start with an open tray — shallow, rectangular and about 18 by 14 inches and about 2 inches deep. Bore small holes in the bottom to allow the drainage of rain or snow. The birds will find the seeds that fall through the holes. Place the tray about 4½ feet from the ground in an open space but near shrubbery, especially evergreens that will serve as a windbreak and afford shelter and protection from a hawk or cat. Place coarse bread crumbs on the tray, making sure they are large enough to be seen from a distance and the birds will start coming to the tray. Many but not all birds, will eat bread and although it is not a high nutritional food for them, it does attract them and is a supplement to any grain mixture. Once they have formed the habit of coming to the open feeder, change to a covered one which protects the seed from bad weather. Many types of feeders are available, even window box feeders “for small birds only” and those with levers that bar starlings and larger birds. Starlings now are believed to eat Japanese beetle grubs so are looked upon more favorably.

In order to discourage starlings as well as jays, grackles and pigeons, restrict the feeding to sweet sticks or candles and provide feeders with small openings. Do not use open trays or place food on the ground.

It has been found that sunflower and millet seeds are the choice of the seed-
“Chickadee Pudding” that many birds enjoy. It is prepared as follows: 1 1/2 cups of melted beef suet, 1/2 cup corn meal, 1 cup uncooked oatmeal, 1 1/2 cups of bread crumbs, 1/2 cup white flour and 1/4 cup of sugar, add bird seed as desired. Mix thoroughly in a shallow pan. Allow this mixture to harden and then cut into handy sized pieces. This mixture may be made in cottage cheese cartons and hung from tree branches. Suet candles are easily prepared. Double a 2-foot length of stout cord and place the folded end in the bottom of a pan and let the loose ends hang free; pour in some melted suet to which chopped peanuts and millet have been added; allow this mixture to harden. After hardening, it can be removed from the pan with hot water and hung in a tree, using the loose ends of the cord. It should be hung close to a branch so that it will not sway in the wind.

Once bird feeding has started, it should be a consistent practice. It is better not to start at all than to feed them intermittently. A bird’s temperature is about 110-112 degrees Fahrenheit and it must consume a lot of food to keep its body heat at the proper level. Deprived of its accustomed source of food a bird is helpless to withstand severe cold weather. A constant supply of feeds and suet at a feeding station will save many resident winter birds and perhaps a transient. It is important to have several feeders. Birds do not like to be crowded when eating.

Many people forget that birds need water in winter and there are electric water warmers available in poultry supply stores. If one is not fortunate enough to have a warmer, very hot water may be added to the cold water in the bath several times during an extremely cold day. The bird bath should not be placed too near shrubbery if there is danger from cats.

Feeders for hummingbirds should be placed early for spring migrants so as to be ready when they arrive. They can be placed almost anywhere and need not be confined to the garden area. They can be attached to large trees at a height of about 5 feet. Often they are hung from porches or near windows. There are many feeders on the market but a small bottle painted with red nail polish will suffice. Many who have been feeding hummingbirds with sugar and water must now change. Studies have shown that a continuous oversupply of carbohydrates causes a liver ailment in the little birds, which may prove fatal. A new and better method is to fill the feeder with one part of honey and three parts of boiled water (the hot water prevents fermen-
These gardens, about 1½ miles apart, are situated in a thickly populated residential section of a suburb adjoining Denver.

The following birds were listed:

Blackbird, Brewer's
Mockingbird, Western
Nighthawk
Nuthatch, Red-breasted
Nuthatch, White-breasted
Oriole, Bullock's
Pewee, Western Wood
Red-wing, Common (Red-Wing Blackbird)
Robin
Siskin, Pine
Solitaire, Townsend's
Sparrow, Chipping
Sparrow, House
Sparrow, Song
Sparrow, Tree
Sparrow, Vesper
Sparrow, White-crowned
Sparrow, White-throated

Several of the aforementioned birds made repeated visits; many were winter guests; others spent the summer; and a few were spring or fall transients.

To encourage nesting birds to build a nest and raise a family, place short pieces of string of varying lengths and hair comings in a convenient place, allowing a few strings to dangle. Some birds, the Robins for one, use mud to plaster their nests, so a small muddy spot in the garden should be available.

Many people have asked should they feed birds the year round. Roger Tory Peterson says: "Is not our pleasure reason enough? Where as the same birds might survive well enough in some thicket in the neighborhood, is it not better to see them every day? Don't believe for a moment that we pauperize birds by doling out the feed. The chickadee that helps itself to the suet will also investigate every insect-infested twig or cranny in the neighborhood."

"There is no question that putting out bird boxes, food plants, protective cover and water has conservation significance, for it increases the carrying capacity of the land. An acre that harbors two breeding pairs of birds can be made to support five — an increase of 150 per cent. A hundred acres as intensely managed could mean an increase of 600 individuals. Build-ups even greater than this are possible."

Records, kept for the past three years, of birds visiting two average sized garden sanctuaries, show that many of the same species appeared in both gardens. A few of the visitors were listed in one but not the other garden so that each listed a bird or two not shared by the other.

These gardens, about 1½ miles apart, are situated in a thickly populated residential section of a suburb adjoining Denver.

The following birds were listed:

Blackbird, Brewer's
Bluebird, Mountain
Bunting, Lazuli
Catbird
Chickadee, Black-capped
Chickadee, Mountain
Cowbird, Common
Creeper
Cuckoo, Yellow-billed
Dove, Mourning
Finch, Cassin's Purple
Finch, House
Flicker, Red-shafted
Goldfinch, Arkansas (Lesser)
Goldfinch, Common (American)
Grackle, Bronzed (Common)
Grosbeak, Black-headed
Grosbeak, Evening
Grosbeak, Pine (Rose-breasted)
Hawk, Sharp-shinned
Hawk, Sparrow
Hummingbird, Broad-tailed
Hummingbird, Rufous
Jay, Blue
Junco, Gray-headed
Junco, Oregon
Junco, Slate-colored
Junco, White-winged

Tanager, Western
Thraiser, Brown
Townee, Green-tailed
Townee, Rufous-sided
Warbler, Macgillivray's
Warbler, Pileated (Wilson's)
Warbler, Yellow
Warbler, Yellow-throat
Waxwings, Bohemian
Waxwings, Cedar
Woodpecker, Downy
Woodpecker, Hairy
Wren, House
Wren, Rock

Several of the aforementioned birds made repeated visits; many were winter guests; others spent the summer; and a few were spring or fall transients.
CHRISTMAS PLANTS

HELEN MARSH-ZEINER

PLANTS ARE popular gifts at Christmas time. If you receive a lovely plant, you are of course anxious to keep it in good condition as long as possible. This can be done by giving the plant proper care.

Keep in mind that these gift plants have been grown in a greenhouse under carefully controlled conditions which were ideal for that particular plant. We can hardly expect to duplicate these conditions in the home but we can provide the best care possible under home conditions and keep our gift plants attractive for a maximum period of time.

Probably the most popular of all Christmas plants is the poinsettia. New varieties have been developed so that the plant you receive may have "blooms" in some shade of pink or rose or even white rather than the traditional red. The so-called flowers are actually bracts or modified leaves. What appears to be centers of these "flowers" are the actual flowers. Many of the new poinsettias are compact in growth and are generally better plants than we used to have.

When a poinsettia arrives at your home, try to find a location where it will be out of drafts and where it will receive some sun. If this location does not display the plant to its best advantage, move it for a few hours to darker parts of the room where it can serve its decorative purpose but then return it to its sunny location.

Keep the soil moist — if the poinsettia is permitted to dry to the point of wilting, the period of attractiveness will be shortened. The plant must not be kept soggy — merely moist.

Poinsettias do not like great fluctuations in temperature. They would do well with a temperature of 70° Fahrenheit days and 65° Fahrenheit nights. In most homes day temperatures are higher than this. The poinsettia will tolerate these higher temperatures if the night temperatures do not drop too abruptly and too greatly.

Sooner or later the leaves will drop. Then you can discard the plant or if you have the facilities and the patience to care for the plant, you can hold it over for another year. Rest it until spring by storing it in a cool, dark basement where it should be kept dry.

After danger of frost is past, cut the plant back severely, repot and sink the pot in a sunny part of the garden. Keep moist. In August, prune again to shape the plant and reduce its size if necessary. Bring indoors before there is any danger of frost and keep it in a sunny location out of drafts. Keep moist but not wet. Feed about once a month with the plant food of your choice.

Since the poinsettia is a short-day plant ("Short-day" plants flower only if provided with less than a certain length of light. If short-day plants receive more light than this maximum, they remain vegetative.), you will need to cover it with a dark cloth or other opaque cover to shut out the light so that it receives no more than 12 hours of light, artificial or daylight. Do this from the middle of September until buds appear. If you do not want to go to this trouble, accept the poinsettia as an attractive foliage plant and do not be disappointed if it does not bloom a second year.

The azalea is another very popular gift plant and one that most people can maintain for several years. It should be kept in as cool a location as possible but it must receive good light. It may be displayed in other parts of the room so long as it spends most of its time in the cooler, light location. The azalea should be kept moist but never water-logged. Spray the leaves with water frequently. This compensates for lack of humidity and also discourages red spiders, the one insect pest which may cause you trouble. If you find red spiders, wash the leaves well with naphtha soap and rinse thoroughly. If this does not prove effective, spray the azalea with nicotine sulphate or malathion.

Spraying the plant with water is particularly important while it is in bud.

Buds may burst if the air is too hot or dry. If the soil is permitted to become too dry, blasting of buds may also result. The azalea may benefit from being placed on a gravel-filled pan in which water is kept. The water should be below the base of the pot, so that the plant never stands in water. Evaporating water from the pan helps to increase humidity around the plant.

During the summer, the pot should be sunk outdoors in a shady location. Be sure that it is kept well-watered. Before there is any danger of frost, prune the azalea to shape, check carefully for the presence of pests and bring into the house to a cool well-lighted spot. A well-lighted basement window is frequently good.

Feed the azalea about once a month. About once a month or every six
weeks, you may add ¼ teaspoon iron sulphate to the pot. Lacking this, you can use 1 teaspoon of household vinegar to a quart of water. Use this solution only when the soil is moist. Both of these treatments acidify the soil.

You will find that some shoots will grow more rapidly than others, so keep these pruned to maintain a well-shaped plant. Remove blossoms as they fade.

The azalea, if kept over several years, will need repotting about the second year. Use plenty of peat in the soil and be sure that you provide good drainage in the pot.

The Christmas begonias, usually 'Lady Mac' or a strain of 'Lady Mac', are very popular at the present time. To maintain a long blooming period, give the Christmas begonia some sun but avoid full exposure to the sun because this creates an environment which is too hot and too dry and can cause leaf fall and drying-up of buds. Spray the plant with water frequently and if possible keep it on a gravel-filled pan where evaporating water will create a moist atmosphere. Water the plant moderately — let it dry out (but not to the point of wilting) between watering periods. Good drainage is essential.

After blooming, most people will find it best to discard the Christmas begonia. However, if you wish to keep it, cut the plant back severely. Keep it moist and light and as soon as danger of frost is past, sink the pot outdoors in a partially shaded location. Bring in early in the fall and repeat the care you gave it when it was in bloom. The parts which you cut off can be made into cuttings and rooted in moist soil or vermiculite to provide young plants for the following season.

You may receive a beautiful hybrid South African amaryllis. To keep the blossoms as long as possible, locate the amaryllis in a cool light part of the room but do not put it in direct sunlight. Keep it moist.

After blooming, continue to water the plant and feed it about once a month. Good care now is important, for you are building up the bulb so that it will produce blooms the next year. The plant should produce several large, healthy leaves to strengthen the bulb. In the spring, sink the pot in the garden in a semi-shaded spot. Keep it moist.

Before danger of frost, return the amaryllis to the house. Store it perfectly dry in a cool part of the basement. Cut off the foliage as it yellows. Let the bulb rest for three months. Then bring it back to the light, water it well and keep it moist, fertilize about once a month and watch for blooms to appear. Sometimes a forced bulb will not bloom the first year after forcing. If this happens, don't give up — continue to build up the bulb and it will probably reward you the following year.

Christmas peppers with their cheery red fruits are often on the list of gift plants. The Christmas pepper should be kept cool, out of drafts and should receive lots of light. If the room is too hot and dry, the leaves and fruit may drop. The soil must not dry out. After the peppers fall, either discard the plant or cut it back and rest it until late May when it may be set into the garden for the summer. It may bloom and produce peppers to make a bright spot in the garden. You can save seeds from fully ripe peppers and plant them in May or June to provide young plants for winter use. The old-fashioned Jerusalem cherry is being used again as a Christmas plant. It requires about the same care as the Christmas pepper.

Because we cannot always give gift plants ideal growing conditions, many of us will find it better to enjoy them while their beauty lasts and then discard them as we would cut-flowers. Unless you can provide them with suitable growing conditions, there is not much point in trying to hold these plants over for another year.

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CONSERVATORY

A Report from the Architects

VICTOR HORNBEIN
and
EDWARD D. WHITE, JR.

The Conservatory construction is well under way and it must now be apparent to even the most inexperienced of sidewalk superintendents that the building is constructed of concrete—not of wood, as was the mistaken conclusion of some we know who confused the temporary scaffolding and framework with the final structure.

The structure now taking shape is the result of more than three years of study and design, starting as a simple greenhouse and growing in scope and structural complexity until its present size, shape and construction were determined. Imposing as the Conservatory appears, however, it is only a part—although the dominant part—of a complex of buildings planned for the Denver Botanic Gardens.

The fundamental requirements of a botanic garden—a garden, a conservatory, a library, an herbarium, a research program and an educational program—served as the basic design program for the buildings. Essentially, a botanic garden is an educational and research institution, with the pleasure deriving from study or even casual acquaintance with plant material as an important secondary benefit.

Such an institution has several functions, including plant research; the exhibition of living plants, among them plants not native to the immediate region; maintenance of a library and an herbarium; and organization of lecture and laboratory classes in the science of botany and the art of horticulture.

All these functions and more will be provided for in the new buildings.

The building complex was located between the north property line and the main axis of the garden, so that from the lookout east of York Street, the vista over Cheesman Park and on to the mountains would remain uninterrupted and the integrity of the garden property to the south and west of the Conservatory would be preserved. The relations and proportion between outdoor gardens and structures were important considerations in the site plan as was the convenience of access, both public and service.

The Conservatory was placed on the high point of the immediate area to give it dominance. Horticulture Hall was located adjacent in such a way as to make use of the common lobby and public facilities and as a secondary element, aesthetically, to the Conservatory. The slope of the ground permitted making the north part of Horticulture Hall three stories high but nevertheless subordinate to the two
The heating, cooling and ventilating systems create the climate in the Conservatory and were required to have the utmost simplicity with a minimum of automatic controls. In our brilliant sunlight, the Conservatory will sometimes become too hot even for tropical plants and will require conditioned air. Taking advantage of this arid climate, cooling will be accomplished by an evaporative system. Side and ridge air vents will provide ventilation and will be operable manually as well as by motor.

The interior lighting of the Conservatory was designed to provide a level of illumination adequate to see the plants but low enough to maintain a night appearance, the atmosphere of a park, illuminated only by specially designed lamp posts, not too closely spaced.

The general contractor, Gerald H. Phipps, Inc., selected shortly after completion of preliminary drawings, has worked with the architects in determining the most economical method for constructing the conservatory vault. After a thorough investigation of precasting and prestressing concrete, it became apparent that the simplest and least costly method would be to pour the concrete in place. It was decided to construct a wooden deck for approximately three-quarters of the entire vault and to attach to it the wood forms for the diamonds are reused as the construction material.

After a thorough investigation of precasting and prestressing concrete, it became apparent that the simplest and least costly method would be to pour the concrete in place. It was decided to construct a wooden deck for approximately three-quarters of the entire vault and to attach to it the wood forms for the diamonds are reused as the construction material.

At this writing, the forms for the end of the building have been removed from the east end and reinstalled at the west end. If the present methodical progress pattern is maintained, the conservatory concrete, spanning 72 feet in width and covering 160 feet in length, will be completed before Christmas, approxi-
mately ten months after work was started on the concrete foundations and buttresses. The complete enclosure of the structure should be achieved early in 1965 and the Contractor expects to complete his work before summer.

The installation of the clear plastic pyramids on each diamond will begin sometime in December, because each diamond in the completed structure must be measured for exact dimensions before the Plexiglas units are manufactured. These glazing domes will be formed to the four-sided pyramid shape from a single piece of Plexiglas for all but the lower two horizontal rows which are too large for available panels and will, of necessity, be formed from two sheets and welded at the intersection.

Concurrent with the vault construction, the mechanical room on the north will be enclosed and filled with the machinery required to provide the Conservatory with a tropical climate; and the observation terrace and lobby on the east will be constructed. The east end will be closed with a temporary entrance wall which will be removed when Horticulture Hall is built. All of those close to the Botanic Gardens are aware of the need for this building and hope its realization may come soon.

Many people were involved in establishing the program for the building and in following it through to completed drawings; many are still working on developments during the actual construction. The Planning Committee of the Denver Botanic Gardens has been especially hard-working and self-sacrificing, meeting almost weekly with the architects from the beginning of the project to the present time. The Committee is made up of Dr. John Durance, Mr. John Mitchell, Mrs. James J. Waring and Dr. A. C. Hildreth. Mr. Lawrence Long and Dr. Mras Shubert have frequently joined these meetings.

Working directly with the architects as engineering consultants were Robert S. Nedell, Structural Engineer and his Project Engineer, Eduardo Salas; Marshall and Johnson, Inc., Mechanical Engineers; and Sol Flax, Electrical Engineer. Mr. Thomas Everett of the New York Botanical Garden and Mr. Walter Kelsey, architect, acted as special consultants. The Ideal Cement Company and the Portland Cement Association provided valuable advice on the structural design details and the composition, color and texture of the concrete; Mr. Edmund Wallace represented the Department of Parks and Recreation; and Gerald H. Phipps, Inc., builder of the Conservatory, advised on costs and methods of erecting the conservatory vault throughout the preparation of the final working drawings and specifications.

The flowers are white when first opened. As they grow older they assume rose or purple shadings. They measure from 2½ to 3½ inches across. The individual blooms, if properly cared for, are long lasting when cut. Use them in arrangements and corsages. Leaves of this plant are very slow growing. To remove the leaves robs the plant of its ability to flower freely. Use some of the broadleaved evergreens or pines or spruces for arrangements with these beauties.

When winter’s firm hand grasps our garden, what a delight to discover a perennial that flaunts its waxen blooms.

In fact the Christmas rose scorns the ease of summer and waits for winter to flower!

This hellebore has been known for centuries, yet each year’s bloom in snow and severe temperatures seems a miracle.

_Hellebore niger_, the Christmas rose and _Hellebore orientalis_, the Lenten rose, are the best known. Both are culturally simple and, once established, are richly productive in our Denver area.

Carefully select a cool, lightly shaded situation, that is protected from strong winds. The soil should be moist but well drained. A deep plot of good garden loam with leaf mold and sand incorporated is ideal. Once established do not disturb because seldom do hellebores flower the first or even the second year after planting.

The flowers are white when first
In its fourth year, the Denver Botanic Gardens Guild continues to better serve the Botanic Gardens through its many successful projects. Our programs this year have also stimulated us further in our quest for horticultural knowledge.

The sale of 1964 gardening calendars was a major money raising project. The sale of these calendars produced a grand profit of $883.78. This means that "with a little bit of luck" we may start in the spring of 1965 to develop the formal herb garden which will be situated in the York Street Unit. We have an estimate that materials and labor will cost $1,900.00.

Again this year the Guild actively participated in the Colorado Garden and Home Show, which is sponsored by the Botanic Gardens. Our group, at the request of Mr. Richard Haughton, General Manager and Mr. George Kelly, Designer, planted and maintained one of the gardens. Some of our members also served as hostesses at the press party on the opening day of the Show.

Although we turned down a request to be fully responsible for the Annual Plant Sale, members of the Guild planned and worked with vigor to make the 1964 Sale a huge success. Our group was again responsible for the Herb Booth. We sold 38½ dozen plants which were grown in the herb garden located in the York Street Unit; 2,135 plants which were purchased from nurseries; 25 herb charts; five mortar and pestles and four potpourri. We proudly contributed a net profit of $595.60 to the Botanic Gardens' general operating fund.

In only the Guild, along with The Garden Club of Denver and The Perennial Garden Club, sponsored the 1964 Terrace and Garden Tours. Each Guild member was responsible for selling five tickets at $2.50 each and acted as a hostess at one of the beautiful gardens.

Programs which were presented to our group this year included a tour of Botanic Gardens House with Mrs. Helen Vincent and a tour of the York Street Unit garden with Mr. Joseph W. Oppe; Dr. Helen Marsh Zeiner, with the aid of colored slides, identified for us many types of house plants and the care needed to keep them hearty and healthful; Mr. George Fukuma gave us the history and kinds of bonsai and demonstrated how to grow a cascade bonsai. Mrs. Ralph Ball explained the three methods for drying flowers and gave us a list of flowers and the methods most often used to dry each successfully; Mrs. J. V. Petersen showed us her colored slides to illustrate planning, locating and planting a rock garden and described the plants best suited for this type of garden; Mrs. J. L. Janosky spoke on herbs just before the Annual Plant Sale to prepare us for our job of selling herbs. Two meetings were devoted to flower arranging: Mrs. Glenn Clayton discussed the fundamentals of flower arranging and Mrs. Edmund Wallace judged arrangements we made ourselves.

Other assistance given to the Botanic Gardens included: hostessing, along with members of the Denver Botanic Gardens Board of Trustees, a box supper for Mayor Tom Currigan and his staff; making evergreen garlands which added a festive mood to the Botanic Gardens House at Christmas time; and volunteering time to help maintain the various plant collections.

This has been an exciting year. We have had an opportunity to get better acquainted with the many facets of Denver Botanic Gardens; to understand how vital each is to this successful and rapidly expanding organization of which we are proudly a part.
BOOK REVIEW

DR. HELEN MARSH ZEINER

TREES lovers will be pleased to know that a revised edition of Knowing Your Trees by Collingwood and Brush has recently been brought out by the American Forestry Association, 919 Seventeenth St., N.W., Washington, D.C.

This book first appeared in 1937 and was at that time a very welcome addition to the literature on trees. Since then, it has undergone several revisions and numerous printings. The 1964 edition, the 19th, has been greatly expanded and improved and is worthy of a place in the library of any tree-minded gardener.

The book has 900 illustrations, including actual photographs of each tree (in both summer and winter condition for deciduous trees), the bark, the flowers and the fruit. These photographs are wonderful aids to identification. A map of the natural range of each tree is given.

A total of 170 different trees are covered, including some of our Colorado natives. The trees are representative of various areas of the United States, so that almost any section of the country has at least one representative tree included. Many of these trees are commonly planted as street trees or specimen trees in our area.

Two pages are devoted to each tree. In addition to the very useful illustrations, there is a well-written and interesting discussion of each tree. Botanical features, ranges and habitats, economic uses and bits of information of general interest are included. The scientific name and several common names for each tree are given. A feature that will appeal to many is that the meaning of the scientific name is explained.

Hardiness zones for each tree are suggested. This should be a useful guide in selecting trees for use in any area.

If you are interested in a book for Christmas giving, consider Knowing Your Trees. Not only is the information adequate and reliable but the book has eye appeal from the attractive jacket right through its well-illustrated pages. You will also find that for a book of its general excellence, the price is reasonable.

Lee Chambers
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We Need YOU!

Up to this time the Denver Botanic Gardens has operated with only a limited number of volunteers to assist the four staff members and three maintenance men. With the opening of the conservatory and operating greenhouses scheduled for next year, it has become obvious that a large organization is needed to cope with the increasing activities.

Therefore, a new volunteer organization—Associates of Denver Botanic Gardens—is being formed. Membership will be open to any man or woman who is interested in the Gardens and wishes to help. Dependable workers are needed for the following activities: 1) to groom the plantings in the Gardens, 2) to guide tours through the various units of the Gardens, 3) to act as hostesses in the House, 4) to assist in the Library, Herbarium, and proposed gift shop, 5) to help with educational programs, 6) to help with stenographic and clerical work, labeling, mapping, and flower arrangements. More information can be obtained at Botanic Gardens House—or you can phone for registration or fill out the membership blank on the following page. Manager of the Associates is Mrs. Chard Smith, Jr. (756-1327), Assistant Manager is Mrs. Graham Morrison (424-0706).
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