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GARDEN MAGAZINE

APRIL 1920
v. 31, no. 2

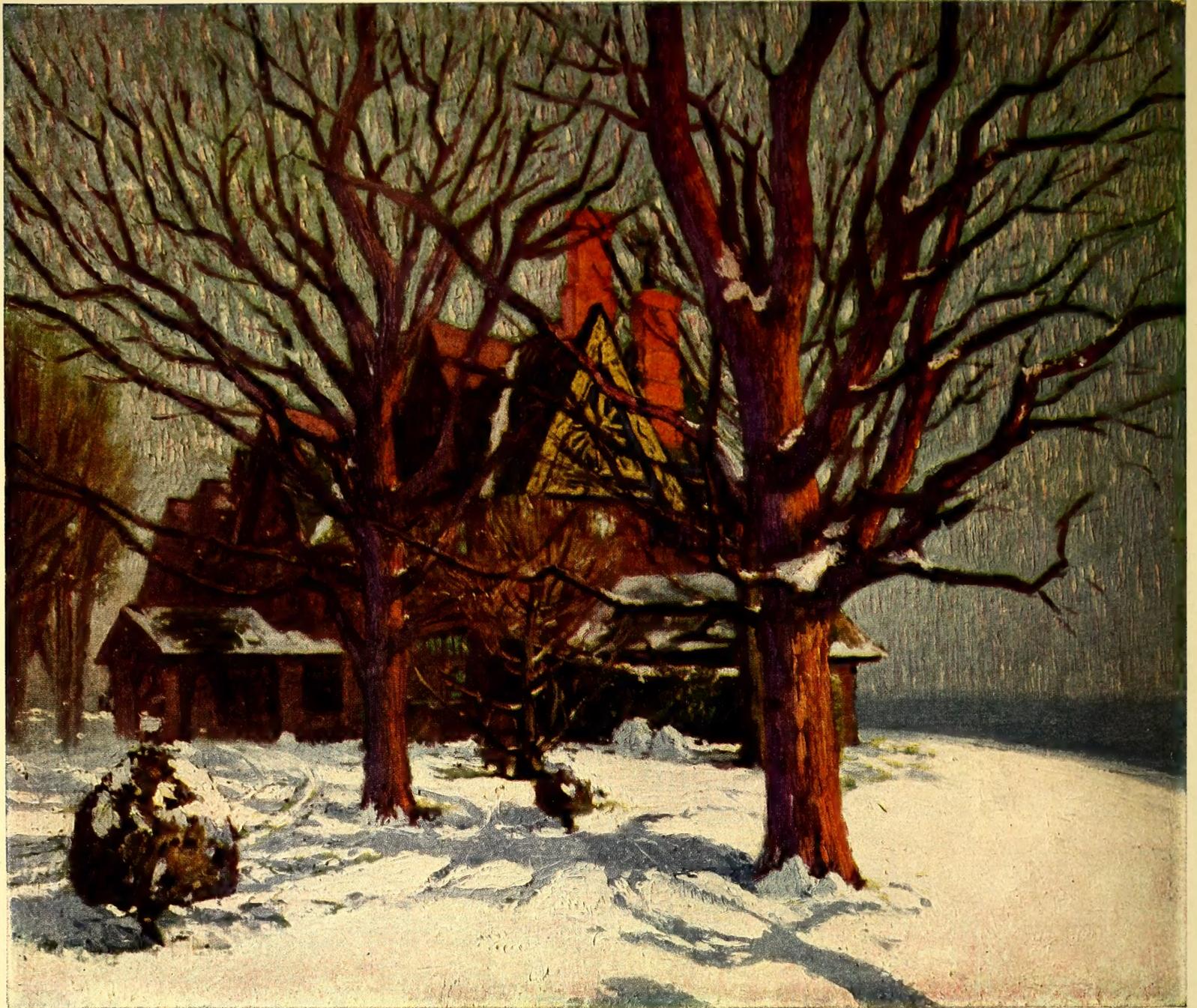
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Doubleday, Page & Co.
Garden City, N. Y.



*Easter Lilies from Seed
American Made Roses
Limas for Lucullus*



The estate of Mr. J. R. Drexel, Newport, R. I., reproduced from an original painting in oil. The treatment of these trees was entrusted to the demonstrated skill of Davey Tree Surgeons

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Father of Tree Surgery

THOSE fine old trees, those towering monarchs that stand vigil over your estate—how have they withstood the winter? The howling blasts have rocked their stalwart trunks, tons of ice and snow have dragged down their sturdy limbs—only the physically perfect ones have a chance to escape serious injury, and some of them are harmed. Perhaps some of your trees—trees that you have learned to love, trees that are an integral part of your landscape—have been branded with premature death. Bravely they will put forth buds and tiny leaves, will simulate the appearance of health and strength—and yet be suffering from fatal injuries both visible and invisible. Last winter's tearing winds may have weakened their structures, internal decay may be at work

—and yet you may remain unsuspecting until some later storm sends them crashing to the earth.

Only the skilled Tree Surgeon, the seasoned practitioner who knows the anatomy of the tree and its troubles as the physician knows the human body, can be sure. The demonstrated skill and established responsibility of Davey Tree Surgeons is your safeguard. Their years of wide public service, their methods of proved value, their thorough training in an organization of recognized stability, will fulfill your highest expectations. They have satisfied the most exacting clientele in America. A careful examination of your trees will be made by appointment.

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Branch Offices with telephone connections:
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Every real Davey Tree Surgeon is in the employ of The Davey Tree Expert Co., Inc., and the public is cautioned against those falsely representing themselves. An agreement made with the Davey Company and not with an individual is certain evidence of genuineness

Gladioli of Distinction for 1920

Van Bourgondien Bros., Babylon, L. I., N. Y.

It is with pleasure that we offer you the most distinct varieties of Gladioli which we grow here in our own nurseries. In our list you will find many of the finest introductions from Holland. It is only by offering the best varieties that we have won our reputation. Jumbo bulbs only.

Our Spring catalogue is ready for mailing. It contains a full list of our Gladioli, Dahlias, and Cannas. We should be pleased to send you a copy. It gives helpful suggestions for planting Gladioli and Dahlias.

Two Gladioli of Special Merit

Red Emperor—Without a doubt this is the finest deep scarlet Gladiolus grown. Spikes are extremely tall with very stiff stems. Flowers are gigantic and of the most gorgeous shade of rich velvet red. 35c each, \$3.50 a dozen.

White Giant—The finest and best pure white Gladiolus known. This variety excels any other white variety on account of its colossal size and purity of color. The spikes are long, and contain an unusual number of flowers. 60c each, \$6.00 a dozen.



v.B.B.

Single Flower Red Emperor

Some Special Collections

	Dozen	100		Dozen	100
America. Lavender pink	\$1 00	\$7 00	Mrs. Frank Pendleton. Salmon pink.....	\$1 50	\$12 00
Baron J. Hulot. Purple.....	1 50	10 00	Niagara. Yellow, pink striped	1 25	10 00
Empress of India. MAHOGANY.....	1 00	8 00	Panama. Rose pink.....	1 50	12 00
Glory of Holland. Pure white	1 00	7 00	Peace. White, red eye.....	1 50	12 00
Loveliness. Cream white, with pink tint.....	1 50	12 00	Pink Perfection. Pure pink.....	1 50	12 00
Mrs. Francis King. Coppery red.....	1 00	7 00	Schwaben. Yellow, red eye.....	2 00	15 00
3 of each of the above 12 varieties, 36 bulbs ..	\$4.00		6 of each of the above 12 varieties, 72 bulbs ..	\$7.50	
12 of each of the above 12 varieties, 144 bulbs ..	\$14 00				

Collection of Dainty Primulinus Hybrid Gladioli

These hybrids are becoming very popular because of their attractive shape and gorgeous colors, and early flowering proclivities

	Each	Dozen		Each	Dozen
Fiery King. Exquisite red, unusually large flowers	\$ 25	\$2 50	Orange Brilliant. A flaming beauty.....	\$ 25	\$2 50
Jane. Soft salmon yellow.....	25	2 50	Orchid. Large lavender pink.....	25	2 50
Nelly. Light yellow, very pretty.....	25	2 50	Treub. Very soft shade of pink.....	25	2 50
3 of each of the above 6 varieties, 18 bulbs ..	\$3.75		6 of each of the above 6 varieties, 36 bulbs.....	\$7.00	
12 of each of the above 6 varieties, 72 bulbs ..	\$13.00				

DAHLIAS FOR 1920

Specialty Collection

Hortulanus Fiet. (Dec.) salmon pink, a great favorite	\$ 75
King of the Autumn. (Dec.) beautiful shade of burnt amber, tinged old rose.....	1 50
Leo XIII. (Dec.) clear deep yellow, large and fine form.....	75
Pres. Faillieres. (Peony) extremely tall and a pleasing shade of red.....	50
White Dove. (Peony) Pure white and very free flowering.....	1 00
Yellow King. (Hybrid Cactus) pure yellow, large and of fine form.....	75
This collection, one bulb of each variety. \$5.00	

Collection of Favorites

Ami Nonin. (Coll.) dark crimson carmine, white collar.....	\$ 75
Ethel Maule. (Show) large pure glistening white, tipped lavender.....	25
Gerda. (Cactus) very free bloomer, red suffused orange.....	50
Gold Land. (Cactus) bright yellow very floriferous.....	25
Queen Mary. (Dec.) pure pink.....	25
St. George. (Single) clear yellow, very free.....	25
This collection, one bulb of each variety, \$2.00	

From Grower to Consumer

Gladioli, Dahlias, and Cannas are the specialties we grow in our Babylon, L. I., Nurseries, the same as Tulips, Hyacinths, Daffodils, Crocuses, etc., are the specialties in our Hillegom, Holland, Nurseries. Our Nurseries here are located in West Babylon, Albin Road, corner Arnold Avenue, and visitors are always welcome. Hundreds of thousands of Tulips and Daffodils have been planted in our Babylon Nurseries for trial, and we expect a glorious sight in the Spring of 1920; therefore do not pass Babylon without a visit to our place this coming Spring or next Summer, when Gladioli and Dahlias are at their best.

We prepay all charges East of the Mississippi. West of that 25% should be added to the amount of the order. We guarantee all our bulbs, roots, and plants to grow and to be true to name, and we will replace any bulb, root, or plant prepaid if found otherwise.

VAN BOURGONDIEBROS.

BABYLON, L. I.

Nurseries at Hillegom, Holland, and Babylon, L. I., N. Y.



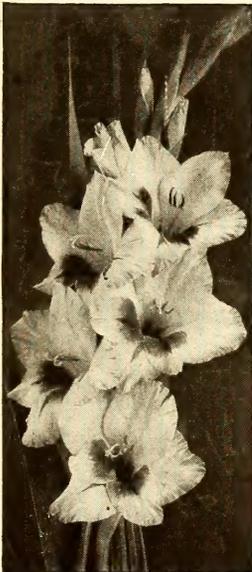
Vase of Five Spikes of Red Emperor

Headquarters for American-Grown Own-Root ROSES

Report "Sold Out"
But . . .



RIGHT now there are thriving in our vast "underglass gardens" thousands upon thousands of mother plants destined to perpetuate the choicest of the race of Roses. We again expect to grow from three to four millions of *guaranteed-to-bloom* Roses, for distribution during 1921. And because we have championed the cause of the Rose for nearly half a century, we want this to serve as a reminder that we are still *headquarters* for the choicest in Roseland. Of course we have a few—a very few of the rarer kinds left, but not enough to offer varieties. Rose lovers, please write!



Garden Collection of 10 MAGNIFICENT GLADIOLI \$1.00 Postpaid

Among these you will find some of the patri- cians of these lovely summer bloomers. From a small beginning, our Gladioli acreage has grown until we annually devote nearly 40 acres to them. *Three million bulbs* represent our crop of last year, and we are going to *grow more* next season. To acquaint you with true value in bulbs of surpassing blooming power, we will mail you *Ten Fine Bulbs* (ten separately named varieties) for *One Dollar*.

—and there are ACRES OF PEONIES

Second only in importance to our Rose in- dustry are the lovely Peonies of which we grow a goodly number of acres also.

Next month and during the months to follow we shall tell you more about these pets of ours, but let us urge you right now to send for a copy of our "De Luxe" Booklet, "Peonies for Pleasure." We want to share our pleasure and pets with you—please let's get together NOW!

THE GOOD & REESE COMPANY

G. & R. Own-
Root Roses
are Guar-
anteed to
Bloom

Largest Rose Growers
in the World

Springfield,
Ohio



Annual Crop
of Hundreds
of Thousands
of Peonies

Of course
there is
a Free
Catalogue
gladly sent
for the asking

THE GARDEN MAGAZINE APRIL, 1920

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LEONARD BARRON, Editor

VOLUME XXXI, No. 2.

Subscription \$3.00 a Year; for Canada, \$3.35; Foreign \$3.65

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DOUBLEDAY, PAGE & COMPANY
GARDEN CITY, N. Y.

CHICAGO: Peoples Gas Bldg. BOSTON: Tremont Bldg.
LOS ANGELES: Van Nuys Bldg. NEW YORK: 120 W. 32nd St.

F. N. DOUBLEDAY, President S. A. EVERITT, Treasurer
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Dreer's Ready to Bloom Roses for the Garden



Hybrid-Tea Rose "LOS ANGELES"

The bulk of our Roses were field grown in 1919; then carefully dug, planted in pots and stored in cold frames. Under this plan the stock is strong and ready to start blooming, and much superior to stock forced by high temperature.

Four Great American Everblooming Hybrid-Tea Roses

LOS ANGELES—By all odds, one of the finest Roses ever introduced. Very vigorous and produces a continuous succession of long-stemmed flowers of a luminous flame-pink, toned with coral and shaded with translucent gold at the base of the petals. In richness of fragrance it equals the finest Marechal Neil. The buds are long and pointed and expand into a flower of mammoth proportions. Price, \$1.50 each.

MRS. S. K. RINDGE—Undoubtedly the finest yellow Rose we have. A strong grower and its rich, chrome-yellow flowers as they mature, become suffused with salmon-pink. Price, \$3.00 each.

MISS LOLITA ARMOUR—Strong vigorous grower and very free flowering. The unique coloring is a combination of tints difficult to describe, and absolutely distinct from all other varieties. The flowers are of large size, full double, with petals of great substance and delightfully fragrant. As the flowers expand they develop to a deep coral-red with a golden, coppery-red suffusion, the base of the petals a rich golden-yellow with coppery-red sheen. Price, \$5.00 each.

WILLIAM F. DREER—For delicacy of coloring, differs entirely from any other variety, reminding one of the delicate tints of some water lilies. The flowers are similar in shape to Los Angeles, and like that variety, beautiful in all stages of development. Soft, silvery shell-pink, the base of the petals a rich golden-yellow which, at certain stages gives a golden suffusion to the entire flower, being particularly brilliant early and late in the season. Price, \$5.00 each.

One each of this set of four California introductions for \$14.00. All in strong two year old plants for immediate results.

New Rambler Rose

POUGHKEEPSIE—A double flowering "sport" of the popular Rambler Rose Hiawatha from which it has inherited richness of color, a brilliant ruby-carmine with just a touch of white at the centre of each flower, together with strong, vigorous, healthy growth with clean foliage which is immune from mildew. Price, \$1.00 each.

Gorgeous New Climbing Rose

PAUL'S SCARLET CLIMBER—No other Rose in any class can compare with it for brilliancy of color, which is a vivid scarlet maintained without burning or bleaching until the petals fall. Flowers of medium size, semi-double, freely produced in clusters of three to six flowers each on much branched canes, the plants being literally covered with flowers from top to bottom. Strong climbing habit and perfectly hardy. Price, \$1.50 each.

The Dreer's Dozen Hardy Everblooming Hybrid-Tea Roses

is revised each year to include the very best Hybrid-Teas for garden culture. This collection will furnish a constant supply of blooms throughout the summer and autumn—the best of every color.

GENERAL MACARTHUR—Flowers of good form, of a warm, rich crimson-scarlet, and delightfully scented.

DUCHESS OF WELLINGTON—Intense saffron-yellow stained with deep crimson, changing to a deep coppery-saffron yellow.

OPHELIA—Delicate tint of salmon-flesh, shaded with rose, very floriferous. Long, stiff stems.

MME. EDOUARD HERRIOT—Coral-red, shaded with yellow at the base, the open flowers of medium size, semi-double, are a superb coral-red, shaded with yellow and bright rosy-scarlet passing to shrimp-red.

LADY URSULA—A delightful tone of flesh-pink, delicately tea-scented.

LADY ALICE STANLEY—A beautiful shade of coral-rose inside of petals shading to flesh-pink.

KILLARNEY QUEEN—Decided improvement on the popular Killarney. Sparkling cerise-pink color, shading lighter at the base of the petals.

JONKHEER J. L. MOCK—Deep imperial pink with outside of petals silvery rose-white.

MME. JULES BOUCHE—White, at times slightly tinted with blush on the reverse side of petals. Long, stiff stems.

RADIANCE—Brilliant carmine-pink, with salmon-pink and yellow shadings at the base of the petals; truly a Rose for every garden.

RED RADIANCE—A counterpart of Radiance except in color which is a clear cerise-red.

CAROLINE TESTOUT—One of the most popular bedders. Bright, satiny-rose, very free and fragrant.

Strong two year old plants for immediate results.

\$1.00 Each

\$10.00 per Dozen

\$75.00 per 100

DREER'S 1920 GARDEN BOOK

Besides illustrating Roses for every purpose, it is the best guide for your Garden. Its articles for both planting and caring for Flowers and Vegetables were written by experts. The varieties listed are dependable in quality and germination. It is quite as much a Garden Book as a catalogue. Free if you mention this publication.

HENRY A. DREER

714-716 Chestnut Street, Philadelphia, Pa.



Training The Nation To Garden With Joy

Every good tool is a boon; but the garden tool a child can handle is a *blessing!* Think of the millions of happy, healthy youngsters that are anxious to help in the garden but cannot, because the imitations of old-fashioned tools made it unsafe to let them.

*This is the
Now Famous*

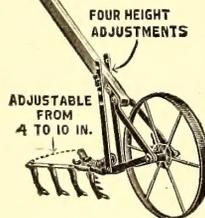


Gilson Weeder

The greatest boon to make young America enthusiastic gardeners! A five-year old boy can handle it easily, correctly and do lots of good work more quickly than a man can do with an old-fashioned hoe. This is no advertising "catch phrase" but a *fact!* The Gilson Weeder Hoe comes in four widths of blades, with convenient rake on reverse side. At reasonable prices at all Gilson Dealers or direct from us.

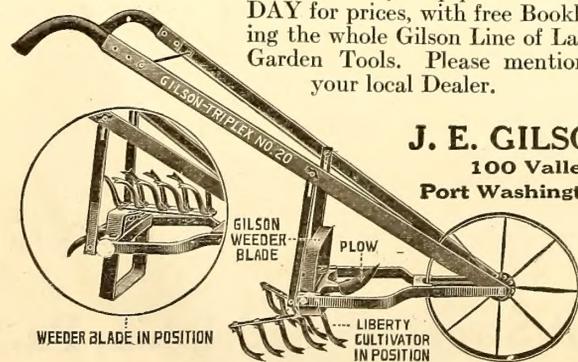
The Liberty Cultivator Weeder

conquers labor troubles in the garden. Everybody just *loves to push it!* The older children (from ten years up) fight about it. Seven sturdy, scientifically shaped cultivator teeth make short work of weeds. Attached to a frame easily adjusted for height, it is the lightest and yet strongest wheelhoe on the market. Will give years of splendid service at minimum cost and serve as a mighty stimulus to better gardening.



The Gilson Triplex—*A Man's Choice*

is the combination of the Gilson Weeder Hoe with a nine tooth Liberty Cultivator and a strong plow, all on one pivot axle easily shifted by hand. No tools required, no fussing about with wrench or bolts! Metal construction throughout—a tool of which you will be proud and which will do the job up proud! Write us **TODAY** for prices, with free Booklet describing the whole Gilson Line of Labor Saving Garden Tools. Please mention name of your local Dealer.

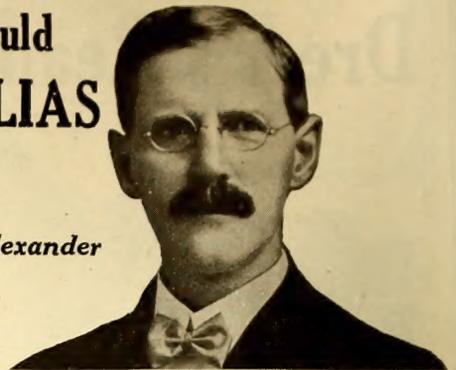


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100 Valley St.
Port Washington, Wisc.

*Makers of
Garden
Tools
to the
American
Nation.*

Why You Should Love DAHLIAS As I Do

—By J. K. Alexander



"The Dahlia King"

FEW flowers there are which so completely captivate a garden lover's heart as the Dahlia. I speak from experience, for a quarter century of watching and growing and studying this ever-changing wonder of the floral kingdom has seen me learn to almost worship its many-sided charms.

But those of you who, as yet, do not know Dahlias as I do, will want to have some real reasons, some facts instead of fancies, as to why the Dahlia should rule supreme in *every garden*. That, by the way, is only my own view but it absolutely expresses my sincerest conviction.

The greatest charm of the Dahlia is perhaps its almost limitless variation of form, shape and colors. The changes from the old-fashioned stiff and ungainly type to the modern floral wonder we now treasure, have been so rapid, so surprising, so delightful, that even the initiated never fail to gasp at the boldness of nature in expressing her ever changing mood through the Dahlia.

The Peony-flowered type shown in basket below has won the hearts of thousands of gardeners who wouldn't look at a Fancy or Show Dahlia. Its bewitching charms are beyond expression in cold type.

Besides a great variety of forms, shapes, and color, we now have delightful fragrance in some sorts; there are early mid-season and late bloomers; all grow and bloom for anybody with less trouble than it takes to raise potatoes. I could go on singing the praise of my favorite flower for hours, but I would rather invite you to

Try Either or Both of these Collections

They are good ones, I promise, for it is their avowed mission to marshal new forces to the camp of all true Dahlia enthusiasts. Once their charms "get you," no persuasion is needed to hold you in line. Try these—your money back if not satisfied:—

FIVE CHOICE DAHLIAS FOR \$1.00 PREPAID

- Ella Kramer** (Cactus) Rose-pink free-flowering.
- J. H. Jackson** (Hybrid Cactus) Giant deep maroon.
- Mina Burgle** (Decorative) Finest scarlet-red, free-flowering.
- Queen Wilhelmina** (Peony-flowered) Fluffy pure white.
- Stradella** (Show) Double quilled purple-crimson.

SIX GORGEOUS PEONY-FLOWERED DAHLIAS FOR \$2.00 PREPAID

- As shown in the basket*
- Queen Wilhelmina**, White.
 - Dr. Peary**, Maroon.
 - Marie Studholme**, Lavender, pink.
 - John Green**, Yellow and scarlet.
 - Mrs. M. W. Crowell**, Orange, yellow.
 - Madonna**, White.

Our Catalogue is Full of Dahlia Lore

Gives notes on history, methods of cultivation; tells when and how to plant Dahlias, how to fertilize, and care for the plants, how to stake, prune, how to gather flowers and display them. Worth any garden lover's time. Your free copy awaits your postcard request.

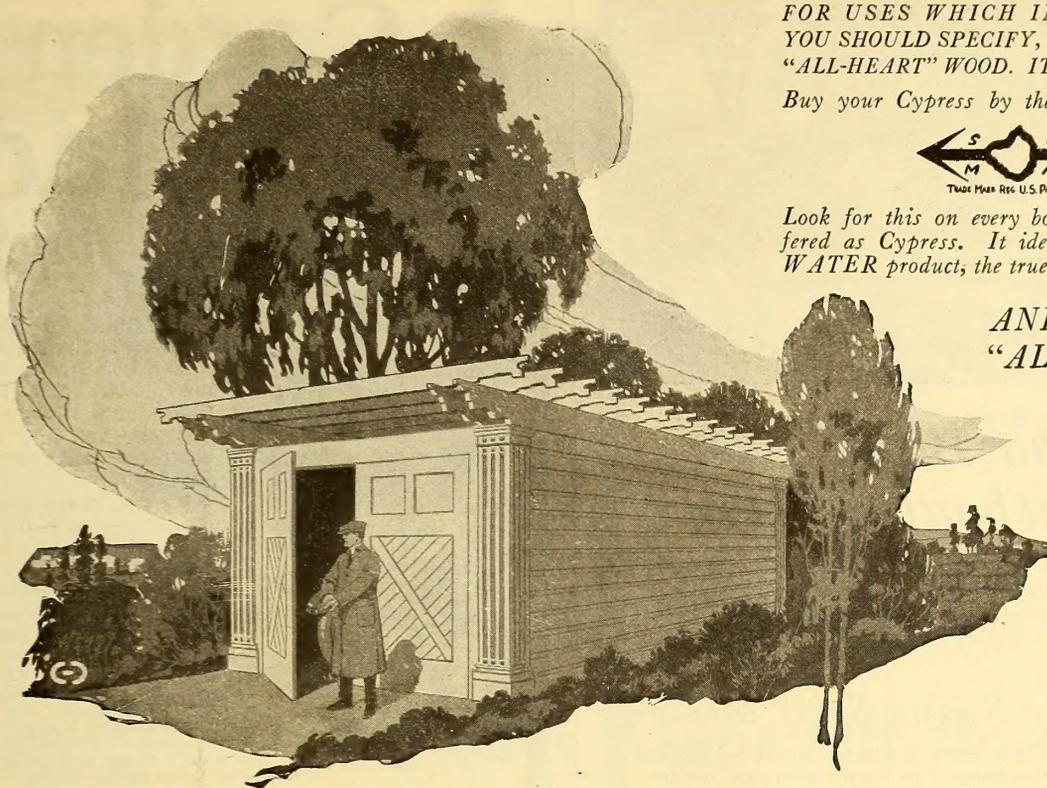
J. K. ALEXANDER

Largest Dahlia Grower in the World

27-29 Central Street East Bridgewater, Mass.



NEW
ONE



FOR USES WHICH INVITE DECAY YOU SHOULD SPECIFY, AND INSIST ON, "ALL-HEART" WOOD. IT WILL PAY YOU.

Buy your Cypress by the Cypress Arrow.



Look for this on every board or bundle offered as Cypress. It identifies the TIDE-WATER product, the true "Wood Eternal."

AND SPECIFY
"ALL-HEART"

The Cypress "Pergola-Garage"

Why should a garage be homely? This one isn't. (Is it?)

The man in front is the owner. He looks well satisfied with the fact that he has enhanced the beauty of his grounds at the same time that he has protected his car.

The picture shows how *your* garage may look if you will allow us to send you, with our compliments, and with no obligation at all, the

Complete Working Drawings (on sheet 24 x 36 inches)

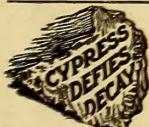
including full specifications—enough for any good carpenter to build from. Perhaps you enjoy such work yourself. If so, you can't go wrong.

It might even be possible to remodel your present garage on these lines. If you do so, of course you will know what kind of lumber to buy. "If you build of Cypress you build but once." You know "the Wood Eternal" is the champion pergola lumber—does not tend to shrink, swell or warp like so many woods—takes paint and stain beautifully, but *does not need either*, except for looks—lasts and lasts and lasts without them. (See U. S. Govt. Rept., reprinted in full in Vol 1, Cypress Pocket Library. Just mention that you'd like this book, also.)

This Pergola-Garage is AN ADDED SUPPLEMENT

to the 9th big reprint of **VOLUME 28** of that home-lovers' guide, counselor and impartial friend, the famous Cypress Pocket Library. It is FREE. Will you write?

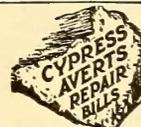
When planning a Pergola, Mansion, Bungalow, pasture-fence or sleeping porch, remember—"With CYPRESS you BUILD BUT ONCE"



Let our "ALL-ROUND HELPS DEPARTMENT" help YOU MORE. Our entire resources are at your service with Reliable Counsel.

SOUTHERN CYPRESS MANUFACTURERS' ASSOCIATION

1209 HIBERNIA BANK BUILDING, NEW ORLEANS, LA., or 1209 HEARD NATIONAL BANK BUILDING, JACKSONVILLE, FLA.



INSIST ON TRADE-MARKED CYPRESS AT YOUR LOCAL LUMBER DEALER'S. IF HE HASN'T IT, LET US KNOW IMMEDIATELY.



Would You Build Without a Plan?

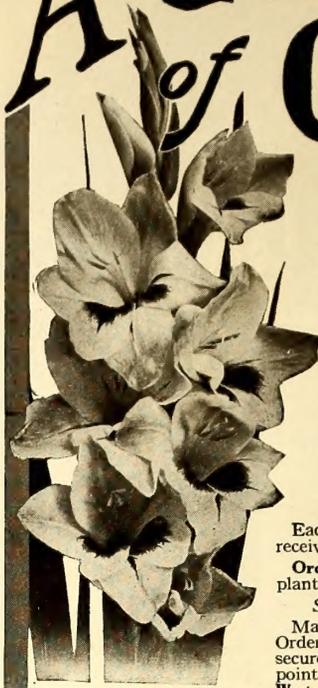
You wouldn't *think* of it because it wouldn't be good business! The same applies to your home surroundings. Many a good picture has been spoiled by an ill-fitting frame. Let us surround your home with a setting that will enhance its beauty and value at small cost.

Smith Landscape Service Saves Money

We know the specific plant material that will accomplish big results at minimum cost. Your money invested in Smith Landscape Service will secure, without extra charge, the benefit of our 30 years' experience of building pictures with plants. An inquiry as to our methods incurs no obligation. We go anywhere for business.

A.W. Smith Co. Landscape Engineers
300 Keenan Building Pittsburgh, Pa.

A Garden Full of Gladioli for \$1.50



The Gladiolus is one of the most satisfactory flowers grown and there is no reason why every family cannot enjoy this grand flower—it is as easy to grow as the potato.

Bloom from July to frost if you plant a few bulbs each month from April to July.

For **One Dollar and Fifty Cents** we will send **50 Bulbs** of our **Grand Prize Mixture**, which covers every conceivable shade in the Gladiolus kingdom.

Each year we sell thousands of these bulbs and receive numerous testimonials as to their merits.

Order Your Bulbs Now, so as to have them to plant when you begin making your garden.

Simple cultural directions with every package

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Holmes' Green Prolific Pole Lima

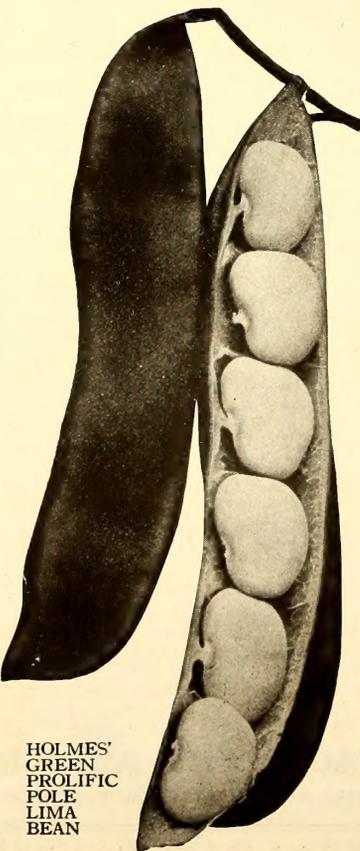
So prolific are the plants that a few dozen hills will bear an abundance of large beans of finest flavor,—no exception. Because of the sturdy growth of this variety, we suggest planting only two or three beans per hill so that a pound of seeds will go far enough to provide any home garden. Price. Pkt. 10c.; ½ lb. 25c.; 1 lb. together with a packet of Holmes' "Green Top" Quality Beet for 50c. postpaid



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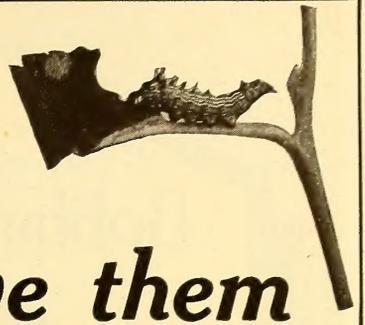


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Rose Lovers— Don't Give them a Chance!



Worms, bugs, and insects recognize no treaties. Wanton destruction of the things you love best in the garden follow in their wake. The time to *prepare* defense is *NOW*. With the help of Hammond's Safe, Tested, Tried and True Insecticides, your garden is properly fortified against all intruders.

Slug Shot Keeps Off Rose Bugs

It does many other things besides. It's America's foremost remedy with which to fight all sorts of leaf-chewing insects such as Cabbage and Currant Worms, Potato Bugs, the Striped Cucumber and Melon Beetles, Aster Beetles, Rose Bugs, etc., etc. Since 1880 it has helped this nation win all the battles with these pests—without damage and danger to plants, human or animal life.



Fight Plant Lice (Aphis) with Thrip Juice

Where a *Contact Insecticide* is required to do *quick* work, Thrip Juice No. 2 will fill the bill in one-hundred point fashion. It *penetrates* quickly and effectively, disposes of such pests as Aphis, Red Spider, Mealy Bugs, White Fly, etc., etc. No remedy we know surpasses it in effectiveness among trees, plants, and shrubs, under glass or outdoors. Wherever a contact insecticide is required to bodily kill pests *instantly*—there use Thrip Juice No. 2.

Hammond's Safe Remedies used from Ocean to Ocean

The *intrinsic* value of all Hammond Insecticides has been responsible for the fact that, with but little publicity, its use has spread to the farthest corners of this continent. Constantly we have tested and tried new combinations, new ways of disposing of old enemies. Hammond's Slug Shot, Thrip Juice No. 2 and Grape Dust Copper Solution and Concentrated Bordeaux are leaders in effectiveness and value.

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now published for thirty-seven consecutive years, is a modest twenty-four page book which has been the standard advisor of American home-gardeners on the subject of fighting blights, bugs, and plant diseases. A thoroughly practical manual, every line of it dictated by experience, it deserves a place in every home garden library. Send for your copy—a post card will do.

Hammond's Paint and Slug Shot Works

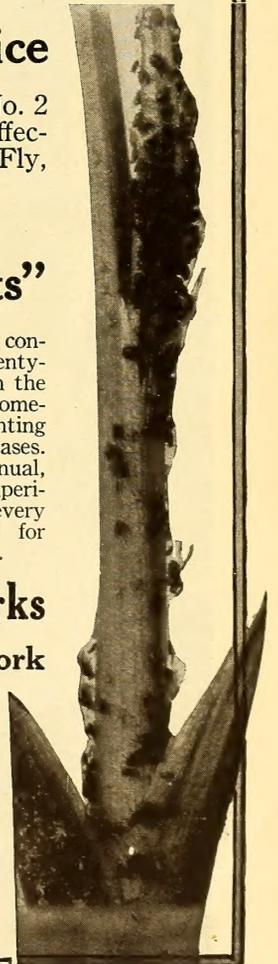
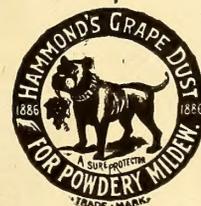
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New York

Hammond's Famous Gold Medal Insecticides

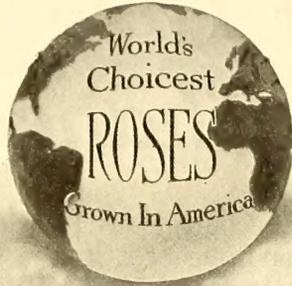
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Hammond's Paint and Slug Shot Works
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The spot where fragrance, beauty and sentiment reach their climax—where the appeal of the garden is strongest.

American Grown Roses for America

Our formal trial garden contains five thousand bushes in two hundred and fifty varieties, and 50 acres are devoted exclusively to the growing of our vigorous, hardy, homegrown rose bushes of every class, and yet roses are exceedingly scarce, so

Place your Order Immediately

Arrange for the general planting of such items as
EVERGREENS—TREES—SHRUBS—PERENNIALS

We have a most complete collection of all plants.

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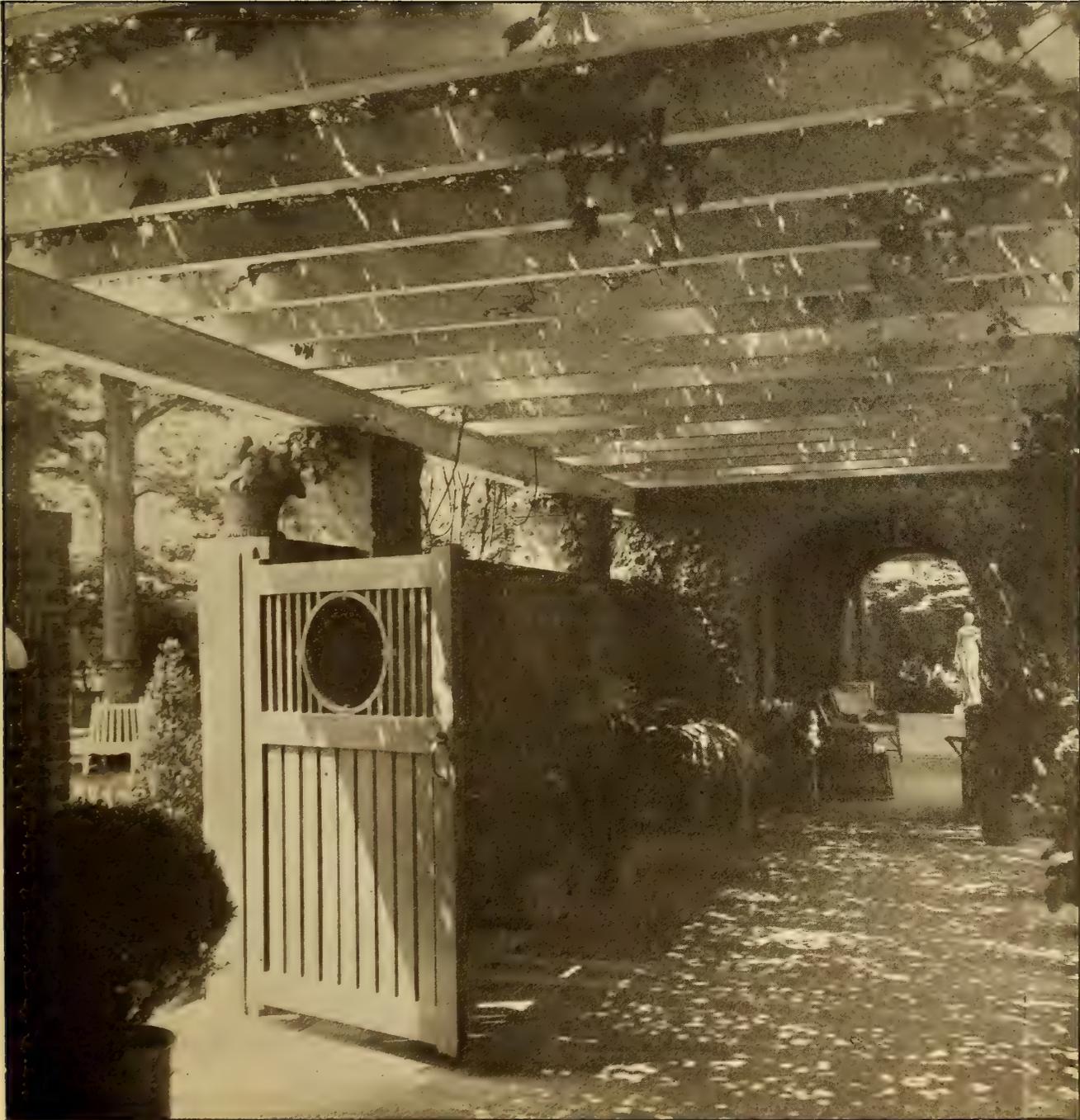


The Garden

Vol. XXXI, No. 2

MAGAZINE

April, 1920



Gillies. Photographer

WELCOME IS SUCH SHADE AS THIS AND SUCH A VISTA
AFTER THE GLARE OF FULL SUN ON A HOT DAY!

Allowed to evolve naturally and individually, every type of architecture will develop structures that express, in terms more or less rigid according to the function of the structure, its inherent spirit—as witness this unusual pergola in the garden of Mr. J. S. Poole. Detroit, Mich. (A. W. Chittendon, Architect)



J. Horace McFarland Co., Photo

A LIVING PILLAR OF FIRE, WITHOUT EXCEPTION THE FINEST ROSE OF ITS TYPE IN THE WORLD—THE CLIMBING ROSE EXCELSA

This superlative achievement of the hybridists' skill is a combination of every good quality of the Crimson Rambler with elimination of its every fault, and justly brought its originator, M. H. Walsh, the first award made of the Mrs. Gardiner Hubbard Medal which is given every five years for the best American Rose produced within that period



Mattie Edwards Hewitt, Photographer

HERE WHERE THE ASCENT IS LOST IN
GLOOM OF OVERTOPPING PINES BROODS
THE STILL MYSTERY OF A TEMPLE PATH

A motif at Uplands, residence of Mrs. Frank D. Frazier, Manchester, Mass., which invites Japanesque treatment with its cunning art that conceals art in the natural planting of Dwarf Pine, Leucothoë, Xanthorrhiza, Funkia, Kalmia, Rhododendron, Pachysandra, Ferns, and the lovely Lilium regale



PLANT BRIEFS



Crocuses. Among the earliest of the spring bulbs are several of the Mountain Crocuses showing up bravely even though they may sometimes be temporarily downed by a belated snowstorm. Some of the best are *C. Sieberi* from the mountains of Greece, with flowers of bright lilac diversified with an orange base; *C. Susianus*, the Cloth of Gold Crocus, a variable species from the Crimea; and *C. vernus*, a native of the Alps, Pyrenees and other European mountains. Its flowers, even in a wild state, vary from white to purple.

Bulbocodium Vernum the spring Meadow Saffron, is a friendly visitor in the early spring. Found wild in the mountains of Europe and Russian Asia it is inclined to burst into growth before the American spring really opens. It has rosy purple flowers which resemble those of Crocus, and they appear before the leaves, which fact serves to clearly distinguish it because the Crocuses push up their leaves in quick succession to the flower. Its pink color strikes an unusual note early in the season.

Erica Carnea is the Alpine Heath, an evergreen flowering shrub attractive throughout the year. In order to be in good time for the spring opening, it produces its flower buds the preceding fall, and ordinarily, if fairly favorable weather prevails, they open about the middle of March. The flowers are red in the type but there are several varieties, including one with white flowers. *Erica carnea* is one of the hardiest of the Heaths and quite easy to grow. It is not particular as to soil, providing it is free from lime, but prefers a sandy loam containing a good proportion of decayed leaf soil. It can be propagated easily by dividing old plants immediately after flowering, or by seeds and cuttings. As soon as the plants have finished blooming the flowering stems should be clipped off to prevent them from becoming straggly, and to promote floriferousness.

"The Best" of anything must always remain more or less a matter of individual judgment based on personal preference; and governed by the extent of the judge's acquaintance with related plants—to say nothing of a special point of view. None-the-less it is always of interest to consider the standards as set up by those who have the right from experience, to speak. Hence it will be worth while to go over the list of the "best 12 varieties of hardy plants" as given by the late Mr. Perry of England, well known the world over both as a connoisseur and dealer in herbaceous plants. Because of Mr. Perry's rather frequent comment that the plant in evidence was "one of the best 12 varieties of hardy plants," an enquiry was addressed to him by Mr. Frank H. Presby of Montclair, N. J., asking for the complete dozen. Here it is: *Arenaria plantaginea gigantea*; *Chrysanthemum Robinsoni*; *Erigeron intermedium*; *Eryngium Oliverinum superbum*; *Helenium pumilum magnificum*; *Heuchera sanguinea Walker's variety*; *Galega Duchess of Bedford*; *Geum coccineum pictum*; *Gypsophila paniculata plena*; *Phlox canadensis Perry's variety*; *Scabiosa caucasica*; *Veronica longifolia subsessilis*. Some of these or their practical counterparts are quite popular in our gardens, while some are possibly quite unknown and now cannot be introduced by direct importation. This list was made up some few years ago, and might be subject to some changes now, it is true; yet the list holds up well to-day indeed, and, at any rate is interesting as a starting point for a possible discussion.

Morus Acidosa is a new Chinese Mulberry introduced in 1908 by E. H. Wilson. It differs from the popularly known members of the family in being a bush of a somewhat straggling nature some six feet high. The fruit is not large but is freely produced and its sub-acid briskness is welcome on a hot day in July. This newcomer is likely to become a really popular plant wonder the next few years and it is being offered already by some nurserymen. As a fruit tree for the children and for the birds *Morus acidosa* makes a strong appeal; it is quite hardy in the north, and has no strong preferences as to soil.

Cultivated Blueberries are not as yet widely grown because the supply is sharply limited although selected plants are being offered in some catalogues this year; and again few people appreciate the differences between the improved and wild forms. Yet a moment's consideration will lead any one to realize the great saving of labor in gathering large berries instead of small ones. Fifty dollars was offered for a Blueberry or Huckleberry bush with berries as large as a cent ($\frac{3}{4}$ inch) in diameter, the plants being needed to cross with others already in hand in New Jersey. No berry of the required size was sent in last year we are informed, but \$25 was paid for a plant from Quebec with berries of $\frac{5}{8}$ inch diameter. Any one interested in hunting for the prize plant may address Miss Elizabeth C. White, New Lisbon, N. J.

Tausendschoen Rose is likely to hold its own as a climber for both garden and greenhouse culture for some time to come—indeed there is not a rival in sight. Not the least attractive quality is the many shades of color that the buds and flowers simultaneously display. In the heat of your garden in mid-summer this range of color is not seen usually, because of the bleaching by the sun's light and heat, but when grown as a pot plant for indoor forcing earlier in the season, with less heat and more shade the rich variety of color from the practically white fully expanded flower to bright crimson in the youngest bud is fantastically beautiful. Outdoors something of this may be approached when the long canes are trained over cross pieces of some pergola or arbor and the opening blooms in the partial shade take on the richer hue.

Leiophyllum Buxifolium is one of our native dwarf evergreens that would seem to have sufficiently attractive qualities to be more generally brought into cultivation. It has been used to some extent by one or two landscape architects in search of a dwarf hardy evergreen for light sandy soils in places on the eastern seaboard exposed to the full strength of the sun. Collected plants from the pine barrens of New Jersey (whence it extends southward to Florida) being their reliance. It is known also as *Dendrium buxifolium*, or popularly as Sand Myrtle. The plant varies greatly in height—from six inches up to three feet, but generally around $1\frac{1}{2}$ to 2 feet. It is really a charming subject having smooth shiny foliage all the year while in spring it is covered with small white flowers. The plant bears a strong resemblance to a small-leaved Dwarf Box but somewhat less compact. As an edging shrub for evergreen plantations, or for introduction into rockeries it has distinct value. So long as the soil is free from lime the Sand Myrtle will grow in peat, sand or loam and it is accommodating as to exposure, growing in both sun and shade.

ROSES REMADE FOR AMERICA

J. HORACE McFARLAND

Editor, *American Rose Annual*

And the Men to Whose Skill We are Indebted for the Romantic Outcrop of Home Introductions Which Have Reached a Climax and Become Available at the Very Moment That Foreign Sources of Supply are Cut Off



John Cook of Baltimore whose achievements in productions for either greenhouse or garden alone would have made him famous. But he did both



"Gurney" Hill, of Richmond, Indiana, originator of this year's lovely prize Rose Columbia and the man who tests commercially every Rose produced

TRULY American Roses have not been "popular," or in general use, in America until recently. The native species, growing wild in lovely luxuriance in their natural haunts, are less well known to the average American than such exotics as the Chinese rugosa and Crimson Rambler, the Japanese multiflora and wichuraiana. The garden forms, too, have been prominently of foreign origin, as witness the 1917 official list of the National Rose Society of England (long the standard of reference in America), which lists but 19 American varieties in a total of 429, all of which, together with at least 500 more French, German, English, and Irish Roses, are in American commerce. We have taken our rose fashions, as well as our dress fashions, from abroad.

Not only has this been true as to the varieties of Roses for American gardens; but the very plants themselves have been extensively from abroad, being mainly "made in Holland," from which country there were imported in the six years of 1913-18 a total of 10,335,187 plants or more than 75 per cent. of the total of 13,736,292 from all foreign sources.

The much-disliked Quarantine Order No. 37 of the Federal Horticultural Board put a stop to this importation of Rose plants, save for an inconsiderable percentage permitted to trickle through difficult regulations "for trial and propagation purposes." America must now depend on her own resources for setting the scenery of the annual court of the Queen of Flowers, held outdoors in the eastern, middle and north Atlantic states from mid-May until mid-October, with the "grand entrée" in the June month of Roses.

This dependence on home production of varieties may not prove an unmixed disadvantage, for it ought to force us to produce Roses better suited to American climatic conditions than those coming from Europe. Our needs in this direction are made manifest constantly in the cor-

respondence of this office. Within one recent week, a letter from Texas and another letter from Kansas have urged the establishment in the semi-arid regions of the United States of such a Rose test-garden as would determine the real value there of Roses in commerce. We must not lose sight of the fact that the people of the hot plains, where dry farming is of necessity practised, have inherent in them exactly the same love of and desire for Roses as that which characterizes those who do the farming and plan the gardens in the relatively humid East and in the fortunate Oregon corner of the far Northwest, where the Rose seems most at home in America.

FOR five years a sedulous endeavor has been made to discover and record the name, parentage, year of introduction and name of introducer of every Rose of American origin, and the resulting list has been published in the successive issues of the *American Rose Annual*, issued by the American Rose Society. It is believed that this list is now, thanks to the untiring efforts of Mr. C. E. F. Gersdorff, of Washington, quite complete, including as it does the Rose results of more than a century in America. The 1919 list covered 428 names, a considerable number of which were mere "sports" of foreign varieties, or climbing forms

of doubtful permanence. Of this number—not 10 per cent. of the European introductions of a single century—barely 150 varieties of American origin have survived long enough to be now in commerce, and the Roses of real importance among them will hardly equal the "threescore and ten" years of life assigned to even a rose-growing man.

Yet the American Roses that have "caught on," and especially those being originated and introduced now that the European Roses are hard to come at, are of notable value for America. Indeed, some of them are the admiration of our foreign friends, as I had witness a few days ago when



THE CLIMBING AMERICAN BEAUTY IS ALMOST TOO GOOD TO BE TRUE!

Of this Rose it is said that no matter how many you cut just as many seem to remain—and its hardiness is unquestioned

a letter from the Secretary of the National Rose Society of England carried a particular commendation of Excelsa, referring especially to a lantern-slide forwarded with others in fraternal greeting to the 1920 annual meeting of the English society by their American friends.

Certain men of America have done great work, and are continuing that work, in providing us with American Roses for America. This work is generally a labor of love, for while the producer of a variety that finds acceptance for cut-flower growing in greenhouses may obtain a moderate financial reward for his successes (I do not mention his failures), the hybridizer of garden Roses has to be content with deposits in the Bank of Glory, checks drawn on which do not pass current for food, shelter or clothing!

THE American Rose Society, which is the national Rose organization of the land, and which is growing in breadth and vigor after twenty years of endeavor, has established a registration method for preventing the duplication of Rose names, so that the man who grows a new Rose can be protected to that extent in his property. Recently it has appeared that through the parallel thinking of Anglo-Saxon minds, American Rose names have been duplicated in England. For example, the Rose Victory was registered in the United States in 1918, in innocent ignorance of which the National Rose Society of England has,



ALEXANDER W. MONTGOMERY, JR.

Of the second generation of craftsmen he deals especially with greenhouse Roses and is the producer of Hadley and Mrs. Charles Russell

in 1919, permitted the same name to be attached to a very excellent Rose now going into commerce. It was because of this duplication that upon a recent application to register a Rose as General John Pershing, the Executive Committee of the American Rose Society postponed such registration until by correspondence it could be ascertained that no English or French Rose had been recorded with the same world-popular name. Out of this has grown a proposition to work out international coöperation in the direction of avoidance of duplication.

The Medals of the American Rose Society are the highest honors obtainable in America, and are cherished in consequence. Gold and Silver Medals and Certificates of Merit are awarded annually by the Society itself as marks of distinction and quality upon a difficult scale of points, of which it takes not less than 95 to merit the guerdon of gold and 85 to attain to the silver reward. Medals are also supplied to affiliated local societies, so that the opportunity to obtain this cherished honor is just as widespread as the

occurrence of the Rose organization, which ought to be found in every progressive city in the union.

Once in each five years the Society awards the supreme honor, the Gertrude M. Hubbard Gold Medal, to "the raiser or originator of the best American Rose introduced within the five years previous." The Rose Excelsa, already referred to as being ad-



THE BEAUTIFUL, FRAGRANT, DARK RED HADLEY

Form of petal as well as of the entire Rose, texture, quality of stem, and quality of leafage, all must be considered and compared in judging



A NEW CONTRIBUTION TO CLIMBERS

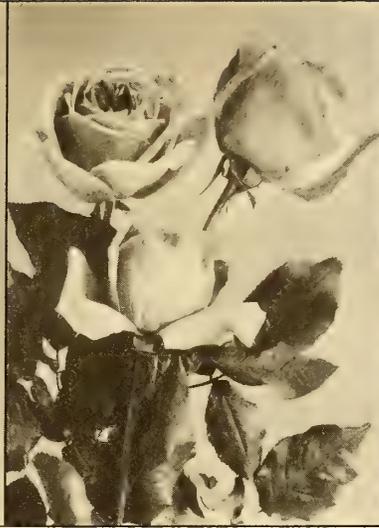
Strikingly lovely are the dark red semi-single flowers of Dr. Huey, produced by an amateur and named for a distinguished pioneer amateur



The salmon hued Rose that came out of the West and is named for its native city, Los Angeles



A silver medal went to Radiance, which enjoys prominence in both the garden and the greenhouse



Of intricate ancestry is Mrs. Charles Russell and of great popularity as a cut flower



Distinguished by bearing the name of Dr. W. Van Fleet the most notable American hybridizer

mired in England, took this super-honor in 1914. It is a glorified and brightened Crimson Rambler, of better parentage, and growth and it has climbed its way right into the esteem of out-door-Rose America.

Excelsa is the product of M. H. Walsh, a half-century veteran who says, "Roses were my first love, and I still cherish them and am happy in growing and experimenting with them." To his credit are other notable hardy climbers that are better than the best Europe can send us: Hiawatha, Evangeline, Milky Way, Paradise, and many others. Particularly must be mentioned Mrs. M. H. Walsh, a lovely double white trailer which deserved and obtained a Gold Medal in 1911, and Lady Gay, which shares honors with Dorothy Perkins as being the best of the double pink Ramblers, at home and abroad.

A VERY different type of hardy Climbing Rose is notably exemplified in Climbing American Beauty (and the name is properly descriptive), Christine Wright, and Purity—the latter again a perfect, descriptive name. These large-flowered Roses have been sent out by Hoopes, Bros. & Thomas, and are the result of the vision of a famous botanist and nurseryman, Josiah Hoopes, who died in 1904, leaving in James A. Farrell an apt pupil to carry out his dream of better Climbing Roses. These Roses are a memorial, in consequence, to a great and lovable personality, and they are sturdily American. Both Climbing American Beauty and Purity have been given Silver Medals by the American Rose Society.



CAPT. GEO. C. THOMAS, JR.
His contributions as an amateur bid fair to produce something sensational

Another unique personality who is no longer with us has left his living, glowing memorials in our gardens, though all too few of us know and grow them. In my own collection of climbers, I get more deep pleasure, I think, from the early morning contemplation of the Sargent Rose than from any other. It is a Rose, and yet it is an apple blossom, raised to a higher power of dainty beauty. Jackson Dawson, who was for well on to two generations the uncannily successful propagator of all sorts and conditions of plants and trees from all over the world, as their roots, cuttings, or seeds were received at the Arnold Arboretum, believed he had done the best work of his life on the Rose which he named for his great chief, Prof. Charles Sprague Sargent—great enough as to man and Rose to be known by just one name—Sargent. By those men and women who look upon a Rose or any other flower without conventional prejudice and can consequently scan its beauty

free from bias, Sargent has been repeatedly called "the most beautiful Rose originated in America." Of Dawson's other excellent roses, I might name the climber W. C. Egan, also named for a cherished and worth-while friend, and Arnold, a vivid crimson single flower which is completely distinct.

All the foreign Rose catalogues of to-day are sure to list American Pillar as a good hardy climber, with single flowers of unusual charm. I remember seeing the trial plant of it on the grounds of its introducers a dozen years ago, and then exclaiming at its combination of boldness and delicacy. Closer acquaintance has only in-



TO BE CHRISTENED IN JUNE

This Rose of Capt. Thomas is now designated simply as "4A" and is regarded as the possible forerunner of a new race from which great things may develop



M. H. WALSH
The man whose climbing Rose Excelsa was winner of the super-honor of the Rose world five years ago

creased my regard for its fine qualities, not the least of which is its peculiar blend of the East and the West in parentage—for it is a cross of the Japanese native *Rosa wichuraiana* with the American native *R. setigera*. This splendid and substantial Rose is the work of the most notable American hybridizer of the day, Dr. W. Van Fleet, now officially "plant physiologist" of the Bureau of Plant Industry

in the Federal Department of Agriculture, but actually the potential Rose wizard of the western world.

This shy, retiring scientist won't talk about himself, or tell of his work of more than forty years as editor, investigator and plant breeder, but he will "open up" on Gladiolus, Chestnuts, and Roses, if you are the right sort of interlocutor. The Gladiolus has benefited by his skill, and he becomes really enthusiastic when he shows you the 85 per cent. blight-resistant Chestnut seedlings he has bred at his laboratory of plant wonders between Baltimore and Washington. Of course he will succeed in putting the Chestnut back into our forests, for he is only 15 per cent. from success now. And what has Burbank done in comparison to that!

But the Rose causes Dr. Van Fleet to smile—a slow smile of pleasure, of vision. He has under his hands now crosses with all the virile West China Rose species collected by the late F. N. Meyer, or brought in by E. H. Wilson and by him discussed in *THE GARDEN MAGAZINE* for June, 1913, and he is each year producing here in polyglot America Roses that are absolutely and hopefully new in parentage, flower, and foliage. They are "on the way" to the eventual true American hardy garden Rose, which must of course be a cosmopolitan Rose, made up just as we are of the best—and some of the worst—of all the lands under the sun.

In each succeeding *American Rose Annual* since 1916 have appeared Dr. Van Fleet's "Rose-Breeding Notes," which have much of the peculiarly fascinating quality so characteristic of the writings of E. H. Wilson. In the 1920 *Annual* are illustrated several of the wonderful new forms produced by Dr. Van Fleet, and he tells of the Hugonis and Moyesi and Soulieana crosses.

The officers of the American Rose Society are now making an effort to secure a means of distribution for Dr. Van Fleet's Rose originations which will more quickly and completely make them generally available. The conventional method of distribution by the Bureau of Plant Industry involves the propagation of a few plants which may or may not be applied for by those to whom the bulletins of this Bureau are sent. It is hoped now so to arrange that a larger propagation may be accomplished, that tests may be made in all of the recognized Rose test-gardens of the country, and that therefore progressive Rose-growing firms may have opportunity to obtain sufficient propagating material, as an exclusive possession, for a long enough term to permit the development and disposition of a large stock at prices only sufficient to cover the cost of distribution, plus a reasonable business profit.

Silver Moon (another properly descriptive name!), Alida Lovett, Bess Lovett, and the exquisite Rose named by the introducer for the originator, are all fine Van Fleet climbers. His

work with the *Rugosa* type has also been valuable, as evidenced in *New Century*, *Sir Thomas Lipton*, and several other good sorts.

A HARDY climber that will bloom continually or repeatedly—an "everblooming" climber—has long been earnestly desired. I know of one electrical engineer who has set himself the task, as recreation from volts and amperes and watts, of producing it. While he has been working toward it, another very earnest, capable and persistent worker has seemingly attained the goal. Captain George C. Thomas, Jr., who for many years has tested, hybridized and discarded thousands of Rose-crosses, presents in the 1920 *Rose Annual* details and illustrations (several in full color) of certain Roses of semi-climbing habit, vigorous growth, good foliage and attractive single and semi-double flowers, which have bloomed on the wood arising from the previous year's growth, as with the conventional climbers, and also on wood of the current year, right up to the frost stop of late fall. It is the more pleasing that these Roses should be announced now, after their trial at Captain Thomas's superb gardens during his absence "flying in France" with the American Expeditionary Force. It is his belief that these varieties are the forerunners of a race as susceptible of development as have been other distinct classes or "breaks" in the Rose family. One of these Roses, "4A," received a Silver Medal in the tests at the well-managed Portland Rose-Test Garden in Oregon, as well as a special prize of the Portland Rose Society for "the best Rose for outdoor cultivation produced by an amateur." It will be formally named at the Portland Rose Festival in June. Another, Dr. Huey, not an everbloomer, is an exquisitely lovely dark red single beauty.

Captain Thomas has undoubtedly made a most important contribution of American Roses for America, and his critical work is continuing.



APPROPRIATELY NAMED PURITY

This lovely white Climbing Rose is a worthy memorial to its producer, the late Josiah Hoopes who gave us also the superb Climbing American Beauty

IN THE Tea and Hybrid-tea classes, particularly for the important use of all-year-round growing for cut-flowers, American hybridizers have, I believe, surpassed the European workers. With John Cook's first American Hybrid-tea Rose, Souvenir of Wootton, produced in 1888, there began an increasing procession of Roses on the way to the wonderful productions of the present. Cornelia Cook was a valuable "forcing" Rose, and Mr. Cook's other hybrids have proved very much worth while, several of them becoming great garden varieties. Radiance, which took a Silver Medal in 1914, has pervaded the gardens of the East, to their great advantage. To see five-foot bushes of it, as well shaped as a Spirea, laden with the lovely flowers it produces continually in the climate of its nativity—the vicinity of Washington and Baltimore—is to realize that it is a distinct asset to America. Following it came Panama, also taking a Silver Medal in 1915, and in the same group are the standard varieties like Francis Scott Key and My Maryland. Mr. Cook's "Glorified La France" was so named by reason of my burst of enthusiasm when I saw it in its home. Mrs. John Cook, a very beautiful white Rose is just now being sent out by a noted introducer. For sixty years of steady endeavor has John Cook continued in his work, differing from that of many foreign hybridizers in the significant restraint which has caused him to discard scores of seedlings which abroad would have been sent out.

In 1914 the notable qualities of the red Rose Hadley won for its originator, Alexander W. Montgomery, Jr., the American Rose Society's Gold Medal, and Hadley yet holds a very high place. Among the commercial men another Montgomery Rose, Mrs. Charles Russell, has a notable vogue, and is advantageously grown by the hundred thousand. It is interesting to read of its intricate parentage: "Mad. Abel Chatenay, Marquise Litta de Breteuil, Caroline Testout, Mrs. W. J. Grant, General



THE AMERICAN PILLAR ROSE

A blend of the East and West, this is one of the finest Climbers and shows wonderful delicacy as well as boldness

MacArthur and three seedlings resulting from these crosses, are all combined to produce Mrs. Charles Russell," writes Mr. Montgomery. Just now coming through the quantity production stage for plants are two new originations of this grower — Pilgrim and Crusader—in which he has obviously yielded to the demand for heavier Roses, those with more petals, more "substance" than the heretofore popular Ophelia type. Crusader, an opulent, full, red Rose, is illustrated in the 1920 *American Rose Annual*.

It is interesting to note the trend toward Roses of more substance. For awhile the informal beauty of the Roses with 20 to 30 petals appealed to those who bought them, and particularly pleased the florists, who found them to open more quickly and sometimes to produce more abundantly. Gradually, however, the taste is veering toward the more solid and substantial Rose with from 50 to 80 petals. It opens more slowly, to be sure, but there is more of it when it does open, and the open flower itself is, as in the case of Crusader, a glorious thing.

Milady is a preferred Rose by many cut-flower growers, and is the production of Edward Towill, who has other good Roses to his credit, as well as the idea of keeping on with hybridization. Mrs. Henry Winnett is a red Rose of merit, coming from John H. Dunlop, a Canadian grower. Hoosier Beauty, a standard red Hybrid-tea, comes from the state of poets and novelists as the work of Mr. Dorner. There are other incidental productions and many "sports" which show discrimination in selection, to the credit of American rose-growers. I have tried to touch the high spots only!

A PARAGRAPH is due to the Rose which came out of the West, captured the admiration of the garden makers of the American East, and, crossing the Atlantic, took the highest French honor in 1918, in the shape of the Gold Medal awarded for the best Rose growing outdoors in the famous Bagatelle gardens, near Paris. Los Angeles is the name, and Los Angeles the home point, of this notable Rose, the production of Fred H. Howard, a far-seeing and energetic hybridizer. The rich salmon-orange tints of the Pernetiana type are combined with softer hues, and with a delightful result in Los Angeles. Mr. Howard has other good Roses in commerce and coming, and it is well to keep an eye on the southern part of California, not only for new varieties but for the vast quantities of Rose plants which we may expect to be there produced.

The shut-off by Quarantine No. 37 has caused the Rose growers in the vicinity of San José to bestir themselves, and millions of cuttings and other millions of rooted plants are now in the ground in this favorable location. The whole of the Pacific Coast deals kindly with the Rose, from the obviously favorable conditions in the south of California to the inexplicably favorable conditions of Oregon. It is not yet certain that California can successfully provide varieties or plants particularly adapted to eastern United States. The climate along the western Pacific slope is far more nearly akin to that of the south of Europe than to that of the east of America. This is mentioned in reasonable caution, but in no sense in derogation of the vigorous American-



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DR. WALTER VAN FLEET
The Rose wizard of the western world

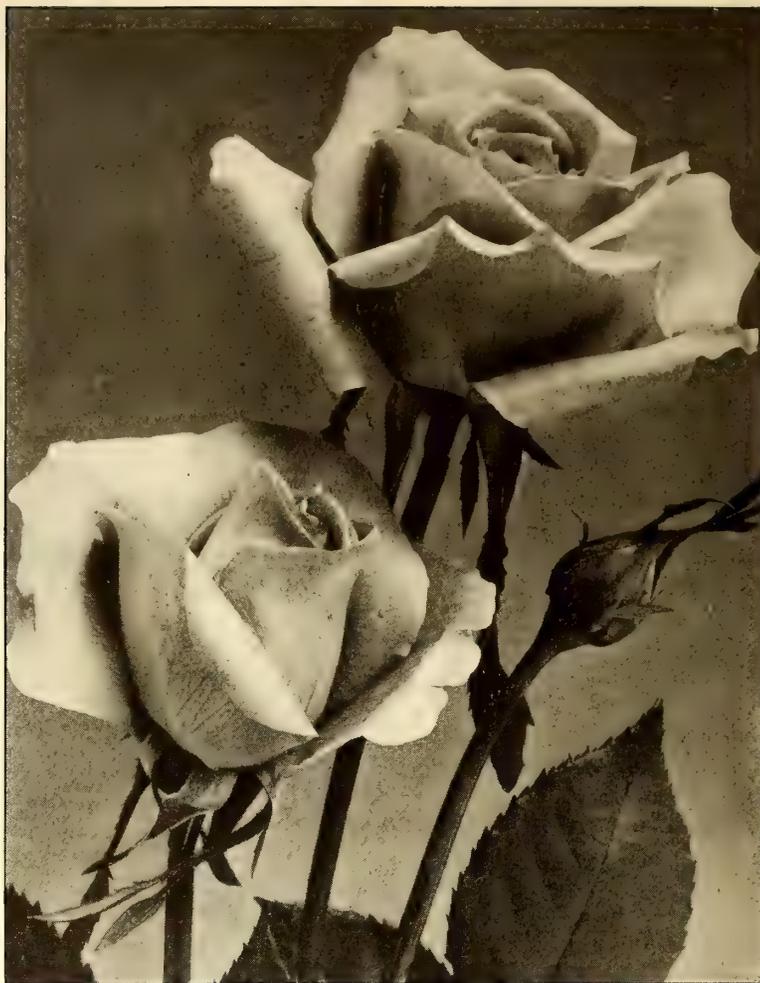
ism that lies back of the great Rose propagation movement now going on.

ONE name stands out preëminently among American rosarians. E. G. Hill, or "Gurney" Hill as his friends hail him, has lived with Roses most of his seventy-odd years, and he looks it! In his astonishing place at Richmond, Indiana, as he takes the interested visitor through what seem like literal forests of Roses, he fits the situation. It was Dean Hole who wrote, "He who would have beautiful Roses in his garden must have beautiful Roses in his heart," and no one who sees Columbia, Premier, Mad. Butterfly, Mary Hill and their yet unnamed sisters in the company of the creator of these varieties can have any doubt about the accuracy of the statement.

For a generation or more Mr. Hill has bought and tried all the Roses of all the world that seemed to him to have possibilities. He is known and loved in England, Ireland, and France among the brethren of the Rose, and his "scouting" has been as welcome as it was keen. In 1912 he saw in the Paul establishment at Waltham Cross, England, not only the beautiful bloom of the then just introduced Ophelia, but also its possibilities, wherefore he bought all he could get of it, and by his own methods and on his own high reputation put that great Rose to work for the Rose-raisers of America who grow the many millions of cut blooms annually demanded.

Then he took up Ophelia as the parent of a new race of Roses. With General MacArthur, Mrs. Theodore Roosevelt, Richmond, Rhea Reid, Robin Hood and other good Roses very much to his credit, with a ruthless discarding of seedlings having the least lack in his scale of points of perfection, he had experience, standards and ideals with which to use what has proved to be a peculiarly potent parent in that same Ophelia. With Mrs. George Sawyer it gave him Columbia; with an Ophelia seedling and Mrs. Charles Russell there resulted Premier. In each of these two notable Roses there was created a higher standard of sturdiness, color, beauty of form, petalage, foliage, endurance and prolificacy for the greenhouse Rose raisers.

Their success has been phenomenal; an inquiry of a hundred large growers producing annually an average of more than a million blooms each, showed that though introduced only three years ago, Columbia led all other varieties, and that Premier was quite important. Columbia has been awarded the Hubbard Gold



THE RECIPIENT OF HIGHEST HONORS

Happily named is Columbia, the Rose that brings the medal of crowning achievement over a period of five years to Mr. "Gurney" Hill

Medal by the American Rose Society, marking for it the highest honors. Columbia, too, has broken through the greenhouse glass, and, as is fit and proper for her name, taken place as a great garden Rose. So this review of the producers of American Roses for America may fittingly close with the story of the Rose which, up to date, stands first and highest among all raised in our land, and a proper memorial to the sweet spirit and the genius of the man whom we all delight to honor!

FRAGRANCE IN ROSES

From an article by Dr. Van Fleet in the *American Rose Annual* for 1919

AGREEABLE fragrance is one of the most valued attributes of the perfect Rose, though many indispensable species and varieties do not possess it in marked degree, and not a few are either odorless or even distasteful to the sense of smell.

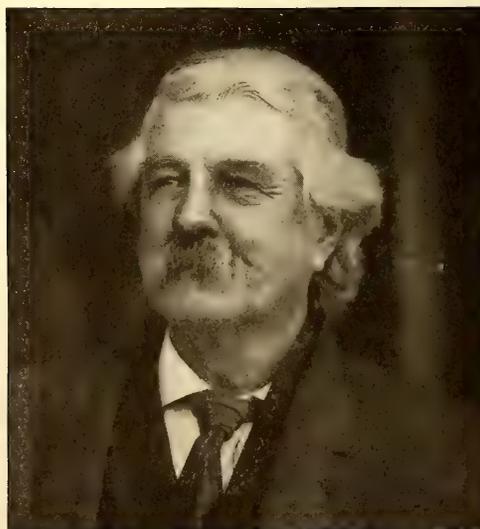
The wild Roses of North Europe mostly have faint fragrance or are scentless and the same may be said of our Middle West and Pacific Coast species, though there

are a few exceptions in the extreme Northwest. *R. setigera*, the scentless Prairie Rose, is a characteristic example of the lack of fragrance of the Rose species of our interior country.

The violet-like odor of *R. Banksiae* may be mentioned. It is faint, but it will be recognized when thousands of blooms are expanded at the same time. The cinnamon odor ascribed to *R. cinnamomea* and kindred species has never materialized in the blooms or foliage of any of the plants I am familiar with. The cinnamon idea is rather associated with the color of the twigs.

The Rose varieties used for the purpose in all the countries concerned in perfume production are, mostly hybrids of *R. centifolia* and *R. gallica*, the former predominating where quality, and the latter where quantity is most highly appreciated.

The fragrance of our garden and exhibition Roses, comes from the hybridization of *R. chinensis*, a species naturally of faint fragrance, with *R. gallica*, of Europe, giving rise to the deliciously scented Hybrid Perpetuals of old gardens, and, by the crossing of these with *R. odorata*, to the immensely popular Hybrid Teas, some of which are intensely fragrant. Tea Roses themselves have their own characteristic fragrance, and this blends well with heavier *centifolia* odor, rising occasionally to the highest pitch of pungent sweetness. The blend of tea-scent with muskiness in some of the dwarf Polyanthas is agreeable, but the *centifolia* fragrance is rarely brought out in hybrids between *R. multiflora* and those carrying *centifolia* odors.



THE LATE JACKSON DAWSON

Whose work at the Arnold Arboretum covered two generations and from whose hands many wonderful hybrids came

YOUR PRIVET HEDGE AND ITS SHAPING

CHARLES CLARK

Entirely Dependent Upon Your Knowing How to Prune It
This Feature Will Become Just What You Yourself Make It

THE object of pruning a hedge is twofold—to give it the proper shape and size, and to increase the number of twigs that bear leaves. Hedges that are permitted to grow too fast do not have enough leaf-bearing twigs. A Privet plant growing alone and untrimmed soon loses the bottom limbs and foliage, and forms a bushy top. The reason is that the top gets more light and air. When a hedge is made of Privet—or any other plant—this tendency to run to top must be overcome. Foiled by severe pruning in its attempt to run to top a plant is forced to make bottom growth; and thus a hedge properly pruned throws out limbs at the bottom.

This is the only feature of growing a good hedge that offers any difficulty. Bottom limbs are to be encouraged; but they should not be permitted to grow long else they will shade out and check the growth of other shoots coming from within the hedge. When their pliant and willowy ends are cut off, they tend to spring upward, and this permits inferior shoots—especially those struggling to emerge from the interior—to get more light and air. Hence constant pruning encourages the weaker shoots to come out to the surface of the hedge, where they are needed to bear leaves.

IT WILL thus be seen that constant pruning removes from the face of the hedge a certain amount of foliage which threatens the limbs below with its shade. Moreover vigorous shoots are always tending to dwarf the less vigorous ones by growing at their expense. Pruning equalizes this; and when a limb is cut on the face of the hedge the buds below the cut shoot out, forming a fork, and thus more leaf-bearing twigs are provided—which is precisely what we want. For we need an enormous number of small twigs at the surface of the hedge to bear the dense crop of leaves there which make a fine, close texture. Frequent pruning is absolutely the only way in which we can get these little twigs.

Another argument for pruning when the wood is small and soft is that it can be done so rapidly, while cutting off branches the size of a lead pencil is slow, hard work. If, on account of a long rainy spell, a hedge runs away and makes a tremendous top growth, all this new growth should come off! Such severe pruning will make it look queer unquestionably for a few days, but new growth will hide the nakedness with astonishing rapidity.

Never trim the sides of a hedge to a true perpendicular. In this form the base is bound to be injured by shade, whereas if

the hedge is trimmed A-shaped—that is, with sloping sides—the base gets the sunlight and air that are so necessary to dense leaf growth.

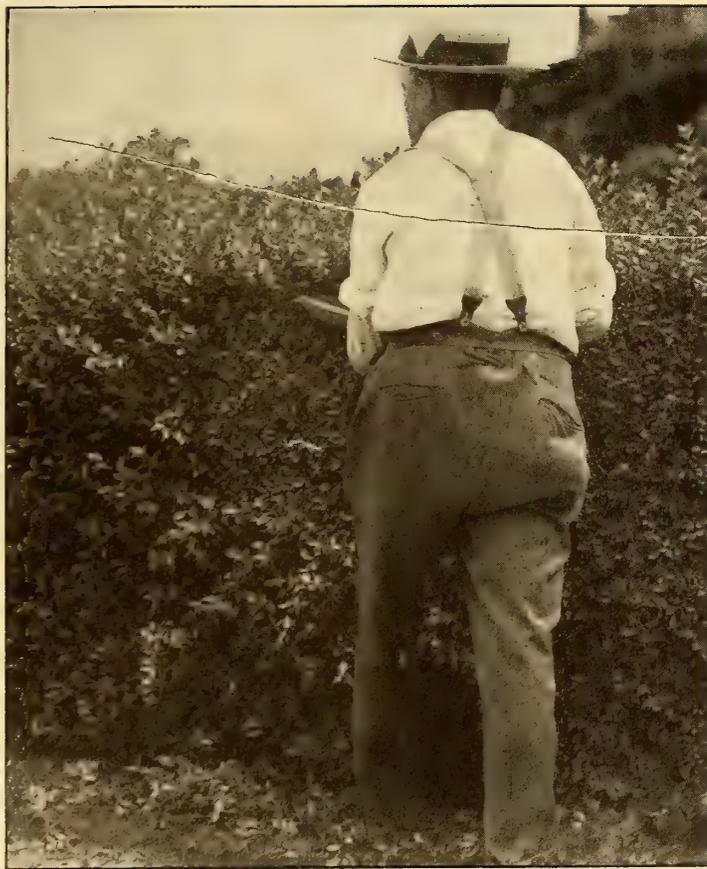
TO GROW a hedge in a shady situation, two things are necessary:—heavy fertilization, and *very severe* pruning. Such a hedge is slow to make a satisfactory base, and the top must simply be cut back until such a base is formed. It requires a longer time therefore to grow such a hedge—and the owner must exercise patience as well as the pruning shears. Similarly, since it is difficult to grow on an east-west hedge an equally dense base on the north side away from the sunlight and on the south where it shines continually, such a one should be pruned with considerable slope to the sides; and the base on the north side should be carefully watched.

If you have a hedge that is all top and leggy below, first mulch it heavily with manure in the fall or early winter; then in the spring cut it down to within four inches of the ground, and start it all over again. You will be astonished at the rapid growth it will make, for old established roots grow a new top with amazing speed. Prune early and often to keep the bottom dense and shape it up well right from the start. And never allow your hedge to grow too thick. A hedge four feet tall should never be thicker than two and a half feet at the base.

When a tree grows near a hedge and stunts its growth, dig a trench two feet deep about three feet from the hedge, cut off all roots of the tree that are encountered and set plank edgewise in the trench to keep out new tree roots. Fill the trench to within 6 inches of the top with stable manure, covering with earth. If it is desirable to grow a flower border close to a hedge, a similar plank barrier may be sunk close to the hedge to keep out the roots, providing it is done while the latter is small.

STOP pruning, or shearing for the season in time to let the last growth “ripen” before frost comes—soft unripened “wood” is tender, and tender growth winter kills every time! To be *quite* safe, the latter part of August should see the last pruning, but the exact time will vary with the soil, site, and season.

Finally, a word about the shears for hedge pruning. Don't sharpen them to a flat cutting edge, like ordinary scissors. They should be rounded up to a sharp, knife-like edge. If you do not understand, go to a dealer, and ask to be shown a new pair, and notice the manner in which the cutting edges are shaped.



WHERE PRUNING TAKES ON THE CHARACTER OF SCULPTURE

It is a man with shears who represents to a hedge that divinity which shapes the end—but rough-hewn it assuredly will be unless he uses brain as enthusiastically as he uses the aforesaid implement!

FLIGHTS AND FRIVOLS OF THE APHIDS

EDITH M. PATCH

Entomologist, Maine Agricultural Experiment Station

The Seasonal Migrations of Hosts of "Green Fly" Bothers the Gardener Who Wonders "Where They Come From." Strange Stories of Alternating Habitations



WE ARE all familiar with at least the main facts concerning the seasonal travels of certain animals. The purple martin, rejoicing in his return to the north with a triumphant, "I'm here! I'm here!", and that annual first Penobscot River salmon, caught in the pool below the falls and sent as a gift to the President of the United States, are as surely obvious hints that the movements of animal life are calendared as the coral tassels of the Maple, or—in those few haunts where ruthless predators have not yet completed its destined extermination!—springtime's sweetest token, the fragrance of Arbutus.

That insects have a share in the itinerary of the seasons is not so generally known, though now and then a northern countryman stops in late summer to admire a gathering of Monarch Butterflies flocking bird-like about some low tree and taking brief hovering flights while biding the long flutter to the south-land. It is not, however, journeys from cold climate to warm with which the seasonal flight of the aphid has concern; but round trips of a mile more or less, from one sort of food plant to another with stop-over privilege. For the migratory aphid requires a change of conditions entailing a new diet in the spring or early summer, and again in the fall in order properly to complete the life cycle of the species.

Little as is generally known about the habits of these marvelous insects, the aphids themselves are recognized by everyone who has much acquaintance with plants; for they are numerous in species and abundant in individuals, and common enough to attract attention even while the secrets of their lives are hidden from all except the detective who has patience enough to follow the clue.

Familiar to all observers of the American Elm are terminal clusters of leaves bunched into rosettes at the tip of the branch (see illustration). Such a deformation constitutes a shelter for a family of aphids during their spring residence there. The mother of the colony is a plump insect of dark complexion, though by virtue of a coat of powder she appears much paler. She passed the winter in the egg stage hidden in the crevices of the Elm bark. In the spring, hatching from the egg just as the leaves are unfolding, she sought a suitable tip, punctured it with her beak and by simply remaining and feeding caused it to form the protective habitation for herself and her young. These, unlike their mother, are born alive instead of being hatched from an egg.

HER progeny are all females. Upon attaining their growth these give birth in turn to living young, also all females. All the descendants of the original aphid or

"stem-mother" as she is called, ordinarily remain in the same cluster of leaves, which become much distorted in consequence and crowded with the numerous family. As each individual casts its skin several times in the process of its growth, and as the discharge of honeydew is abundant, the rosette after a time contains considerable waste matter which causes it to look untidy within. Conditions are kept remarkably sanitary, however, by the aid of the waxy secretions of the aphids, particles of which cover the honeydew so that the liquid rolls about in white coated pellets without drenching the insect. A further protection is afforded also by the waxy powder which remains upon their bodies rendering them impervious to moisture.

The earlier members of the family, including the stem-mother, are all wingless. In June, however, comes a generation that with maturity develops wings! These late individuals, or "spring migrants" as they are called, resemble the apterous generations previously mentioned in being all females, but they are smaller bodied and differ in various structures as well as in having wings. And instead of remaining in the leaf cluster with their relatives, they take flight, seeking fresh vegetation for the establishment of the summer colonies. They are strong on the wing and probably fly to distances of at least a mile if they do not find a suitable location nearer at hand. And when they desert the Elm leaf which has furnished sap for their development, they are "instinctively" led to an entirely different habitat, namely the Apple tree, the Hawthorn, or the Mountain Ash (all *Pyrus* species).

Finding one of these trees, the migrant alights on a leaf, crawls to the underside and remains there quietly while giving birth to young which seek some tender place on the branch or, by preference, a "water sprout" before settling to feed. And these summer colonies of our aphid of Elm and Apple, like their spring antecedents, are composed only of females; and the immediate progeny of the migrants are wingless and have their bodies whitened by the secretions of the wax glands.

These fine waxy filaments now fluff out in a white mass about the insects, however, whence they are commonly known at this period as the "woolly aphids of the apple,"—in many parts of the world the worst pest with which the orchardist has to contend. It is not, however, the economic significance of this insect with which the present discussion is concerned, but its life history with reference to the remarkable migration from Elm to Apple and return. For late in the season a generation of winged females is developed on the Apple. These are the "fall migrants," in appearance very much like the spring migrants; and they in turn

SUMMER AND WINTER RESIDENCES OF SOME OF OUR BEST KNOWN AND MOST UNPOPULAR PLANT LICE

PRIMARY HOST PLANT	SECONDARY HOST PLANT	NAME OF APHID
Elm (<i>Ulmus americana</i>)	Apple, Hawthorn, Mountain Ash	<i>Schizoneura lanigera</i>
Elm (<i>Ulmus americana</i>)	Juneberry (<i>Amelanchier</i>)	<i>Schizoneura americana</i>
Elm (<i>Ulmus campestris</i>)	Currant, Gooseberry (<i>Ribes</i>)	<i>Schizoneura ulmi</i>
Elm (<i>Ulmus americana</i>)	Grass (<i>Aira</i> and <i>Agrostis</i>)	<i>Tetraneura graminis</i>
Elm (<i>Ulmus montana</i>)	Grass (<i>Echinochloa</i>)	<i>Tetraneura ulmi</i>
Maple (<i>Acer saccharum</i>)	Alder (<i>Alnus incana</i>)	<i>Prociphilus tessellata</i>
Ash (<i>Fraxinus pennsylvanica</i>)	Fir (<i>Abies balsamea</i>)	<i>Prociphilus venafuscus</i>
Cottonwood (<i>Populus</i> sp.)	Beets (<i>Beta vulgaris</i>)	<i>Pemphigus betae</i>
Poplar (<i>Populus deltoides</i>)	Lettuce (<i>Lactuca</i>)	<i>Pemphigus bursarius</i>
Poplar (<i>Populus occidentalis</i>)	Buttercup (<i>Ranunculus</i>)	<i>Thecabius populiconduplicifolius</i>
Skunk-bush (<i>Rhus trilobata</i>)	Wheat, Oats, Barley, etc.	<i>Rhopalosiphum rhois</i>
Currant (<i>Ribes aureum</i>)	Lettuce, Sow Thistle (<i>Sonchus</i>)	<i>Rhopalosiphum lactucae</i>
Russian Olive (<i>Elaeagnus</i>)	Persicaria	<i>Rhopalosiphum hippophae</i>
Plum (<i>Prunus</i>)	Arrow-head (<i>Sagittaria</i>)	<i>Rhopalosiphum nymphaeae</i>
Russian Olive (<i>Elaeagnus</i>)	Canada Thistle (<i>Cirsium arvense</i>)	<i>Myzus braggii</i>
Peach, Plum, Cherry	Potato, Cabbage, and others	<i>Myzus persicae</i>
Willow (<i>Salix</i>)	Parsnip	<i>Aphis saliceti</i>
Apple (<i>Pyrus</i>)	Rib Grass (<i>Plantago</i>)	<i>Aphis malifoliae</i>
Apple (<i>Pyrus</i>)	Oats, Wheat, etc.	<i>Aphis avenae</i>
Choke Cherry (<i>Prunus</i>)	Oats, Barley, etc.	<i>Aphis pseudoavenae</i>
Apple (<i>Pyrus</i>)	Clover (<i>Trifolium</i>)	<i>Aphis bakeri</i>
Hawthorn (<i>Crataegus</i>)	Clover (<i>Trifolium</i>)	<i>Aphis crataegifoliae</i>
Plum (<i>Prunus</i>)	Grass (<i>Panicum, Setaria</i>)	<i>Aphis setariae</i>
Plum (<i>Prunus</i>)	Thistle (<i>Cirsium lanceolatum</i>)	<i>Aphis cardui</i>
Spindle Tree (<i>Evonymus</i>)	Bean, other plants	<i>Aphis rumicis</i>
Plum (<i>Prunus</i>)	Hop (<i>Humulus</i>)	<i>Phorodon humuli</i>
Plum (<i>Prunus</i>)	Grass	<i>Hyalopterus arundinis</i>
Rose (<i>Rosa</i>)	Potato and others.	<i>Macrosiphum solanifolii</i>
Rose (<i>Rosa</i>)	Oats, Wheat	<i>Macrosiphum granaria</i>
Rose (<i>Rosa</i>)	Grain	<i>Macrosiphum granaria</i>
Black Haw (<i>Viburnum</i>)	Grape (<i>Vitis</i>)	<i>Macrosiphum dirhodum</i>
Currant (<i>Ribes</i>)	Lettuce, Endive, etc.	<i>Macrosiphum illinoensis</i>
		<i>Macrosiphum lactucae</i>



APPLE APHIS ON THE ELM

The "spring migrants" move into summer quarters on the Apple

leave the summer food plant and take flight—back to some American Elm.

Alighting on the bark, they seek a convenient crevice and give birth to minute young, part of which are egg-laying females and part males—this being the only time in the life cycle of this insect that either of these forms is produced. These tiny "true sexes" have no functional mouth parts and do not eat, their chapter in the life history being concerned merely with mating and providing for the deposition of the over-wintering egg. Each female lays but one of these, the single egg nearly filling her small body.

This egg is the closing page of the life cycle for the fall, and the opening one in the spring; because it is from this over-wintering egg that the stem-mother hatches at the time of the bursting leaf buds, in season to form the rosette of Elm leaves for the spring habitation of herself and her numerous progeny. And startling as this life-round may seem, it is no isolated example, for the histories of many species of this family of insects are most dramatic!

TAKE that Elm leaf with a rolled-under edge, for instance, hanging on the branch not far from the rosette just discussed. That leaf holds a story as interesting as the one just told and much like it, except that its spring migrant seeks, instead of the Apple or Hawthorn, the Juneberry or Shad-bush, on the underground stems of which its summer colonies dwell. And the similar rolled-under leaf of the English Elm shelters an aphid that migrates to the Currant to pass the heated term.

Nor are the Elms alone in serving as winter and early spring residence for aphids who spend their summers in other parts. Among the common spring leaf-feeding aphids which winter in the egg stage on the Apple, for instance, the migrant of one takes flight

to Oats and certain other grasses, where it has to be reckoned with as one of the most serious of our grain pests. Another species uses the Clover as a summer resort—and for a change in diet—after having wrecked the leaves of the orchard it has inhabited early in the season. The insect famous in economic literature as the Hop aphid or Hop-plant louse winters on the garden Plum, as does a second species which migrates to Thistles, and a third which eschews the country for the greater refreshment of a watering place during the hot months—in other words a residence aboard an Arrow-head or certain other succulent plants (See THE GARDEN MAGAZINE, December, 1917) where it enjoys a more or less complete change of scene and diet.

SO THE man who innocently plants Lettuce near his or his neighbor's Currant bushes is simply making matters convenient for one of the aphids migrating from Ribes to members of the Compositae—and correspondingly difficult for the person who washes the

salad, for the leaf-green bodies of the apterous summer forms of this species blend so well with the color of the Lettuce that detection is almost impossible—and the insects cling moreover, amazingly.

All this considered, it is small wonder that the gardener exclaims, "where do these insects come from?" upon seeing aphid colonies thriving where a few days before there were none; and the question has as many answers as there are migratory species. Which may seem distracting, though the knowledge is an advantage, for reference to the accompanying table will suggest that not infrequently the dual personality of these remarkable insects gives a double chance at their control; while with certain of them, on the other hand, their opportunities of escape are twofold because of added difficulties presented by their complex existence.

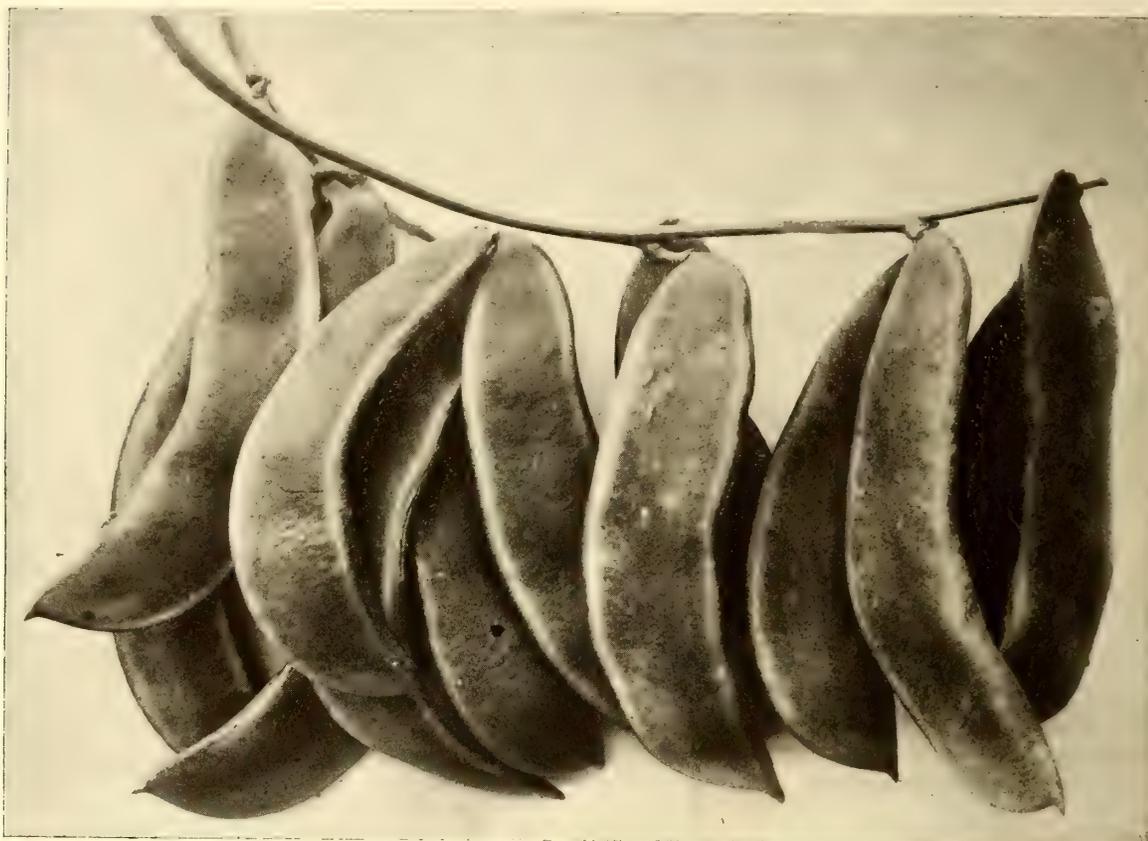


WHEN SUMMER COMES

A colony of woolly aphid that left the Elm and is established in its summer home on the Apple

GROWING LIMAS THAT ARE FIT FOR LUCULLUS

Not so Much a Matter of Which Particular Kind or Type, but Rather of Giving Right Conditions, and Picking and Using at the Right Time



Famous for its quality and heavy yield—Carpinteria Lima

I. HIGHEST QUALITY AMONG LIMA BEANS

ADOLPH KRUEH

IN ONE respect the two great American vegetables, Corn and Lima Beans, are alike—you *must grow them yourself*, gather them when “just right,” and prepare promptly, or the elusive “quality” will not be there at mealtime. The rich, marrow-like, peculiarly characteristic flavor of Lima Beans cannot be canned, captured by drying, or gotten hold of in any other way than via the home garden.

Both the tall or climbing, and dwarf or Bush Limas are of specific usefulness. The dwarf sorts are unquestionably the earlier, but the very much longer branches of the tall sorts bear more pods, and consequently their yield is greater; and notwithstanding the introduction of very large-podded dwarf sorts, the Pole Limas generally surpass in size both of pods and shelled beans. Where garden space is limited and poles are not available, Pole Limas may be grown along fences or trellises, thus serving the treble purpose of creating shade, hiding unsightly objects, and yielding food.

As to difference in flavor between Bush and Pole Limas I can truthfully say there is none. A great deal depends at what stage of development the pods are picked and how soon after picking the beans are shelled and cooked. Thirty minutes of cooking may bring out the flavor to perfection while forty-five minutes may neutralize it. Still, a great leeway is possible in connection with these various factors if you press into service pedigreed quality kinds of proven behavior; and it is in the endeavor to introduce you to Limas that *always behave*, that I first mention:

The Quality Trio Among Bush Varieties

TWELVE years ago a young son of one of the largest Lima Bean seed specialists in California (where, incidentally, nearly the entire crop of all Limas is produced) walked through a field of King of the Garden Pole Limas and discovered, notwithstanding the field had been “rogued” before, two “sports” of true bush habit, with pods every bit as large as those of the King of the Garden Pole variety. These two mutations or “sports” carried pods of entirely different types; and there isn’t a gardener to-day who has not heard of Fordhook and Burpee-Improved as the most up-to-the-minute quality Bush Limas available.

Fordhook Bush Lima is the largest podded form of the old-fashioned “fat” or Potato Lima. The pods average 5 inches long, are borne in pairs or double pairs and contain on an average four large, thick, green-skinned beans that truly have no superior in flavor. (Incidentally, here is a “tip”: whenever you see a green-skinned Lima, make up your mind that it is far superior in flavor to the white or yellow-skinned bean). A week to ten days after Fordhook has yielded its first picking, the Burpee-Improved brings us its large, flat pods equal in size to any pole variety. The pods average 5½ inches long and contain on an average 5 beans which, in the green stage, are as large as those of the largest Pole Limas.

The introduction of these two sorts marked the dawn of a new era in Bush Limas for, popular as old Burpee’s Bush Lima,

Quarter Century, or Wonder Bush are to-day, both Fordhook and Burpee-Improved are bound to supersede as soon as seeds can be produced in sufficient quantity. The third of the really pedigreed Bush Limas is Extra Early Wilson or Extra Early Giant Bush, a comparatively new comer which is the product of persistent selection for earliness. Its pods do not average any larger than those of Fordhook, and contain flat beans which bulk less, but they are ready for picking from 5 days to a week before any other bush variety with the exception of the old Wood's Prolific. This however is fairly obsolete.

The Worth While Tall or Climbing Sorts

AS IN the case of Bush Limas, the Pole varieties started to make most rapid strides in popular favor after a new variety some twenty years ago almost revolutionized Lima Bean growing. Up to 1900, Large White Lima and its improved form, King of the Garden, were the recognized leaders among Pole Limas. They required such a long season, however, that in most sections growers had to be satisfied with gathering about half the pods set, for the frost would gather the other half. Then came Henderson's Leviathan, marking the first forward step toward shorter seasons of development for Pole Limas. Its pods are not so large as those of the older kinds, nor are the beans, but within 100 days Leviathan perfects a good portion

of the pods that set early, and, where frost stays away for four months, it is a most prodigious yielder of handsome pods, borne in large clusters.

About eight years ago a specialist on the Pacific Coast started to experiment in selecting pods bearing a majority of green-tinted beans. And four years of constant effort in one direction produced highly gratifying results. In honor of its birthplace, which is the home of all that is good in Limas, the new variety was called Carpinteria; and in Carpinteria Lima we have unquestionably the very highest quality Pole Lima in cultivation to-day. In general character of pods or bearing qualities it does not differ greatly from Leviathan except that the shelled beans are more elongated and that all of them have the desirable green tint. In season of bearing it will prove slightly earlier than Leviathan, yielding the second picking when Leviathan is just perfecting its first pods.

Truly the leader of them all for size, Burpee's Giant Podded is actually what its name implies. Monstrous pods 6 to 8 inches long, containing from 5 to 7 beans an inch or more in diameter, are ready to please those who look for size. And notwithstanding these extraordinary dimensions, the young green beans are quite thin-skinned and tender. Where long growing seasons prevail and size is wanted this Giant-Podded form will find a ready welcome.

II. THE BEST CULTURE FOR LIMAS

ARCHIBALD RUTLEDGE

FOR superlative quality the seed of Lima Beans should first be superlative. In my own experience I have found this of vital importance and by carefully selecting Giant Pole Lima over a period of six or seven years, with a view to improving the strain I have accomplished gratifying results. My method has been to select the largest and most perfect pods on the most vigorous vines and permit these to ripen. From the beans thus gathered, only the largest and the most perfectly shaped are used in planting; and the insignificant amount of care and patience required for this performance is out of all proportion to the abundant crops of luscious Limas which it insures. But the matter of seed is, of course, not all.

The soil is important though Limas are tolerant in this respect and can be successfully grown on tough clays or light sands. There must be friability, however, and that texture which encourages fine growth, and there must be the proper amount of enrichment and humus. I have grown them in tough clay and mellow loam with about equal success, but it takes more work to grow them in the clay for a more thorough preparation is required. I spade each type of soil very deeply in the fall, letting it lie in the rough



Unquestionably the largest in pod and bean—Giant-Podded Pole Lima

over winter for the action of freezing and thawing to pulverize the surface. In the spring the loam is merely raked over and "fined" by surface working, but the clay is again turned under and carefully pulverized.

After seed and soil, the next consideration is the kind and the amount of fertilizer to use. Good stable manure may be applied very heavily, either in the fall or spring, turned under, and mixed thoroughly with the soil. If it is old enough to be more like humus than active fertilizer, it would be hard to use too much. And dig it in as deeply as possible! This with leaf-mold, old compost and chicken manure supplies all they need. They thrive on somewhat liberal applications of the latter, scattered on the surface of the ground about the roots when the Beans are flowering and setting their first pods, and again when they begin their second general flowering.

The question of supports for Limas is, of course, confined to the pole varieties. Unquestionably, the tall Limas are more productive; and, bearing their fruit as they do high off the ground, fewer pods are liable to mold and mildew. I like the Bush Limas in some ways, but I have confined my experiments almost wholly to the Pole Limas, hence can speak from exper-

ience only of these. I prefer a wire fence to anything else for their support and I like to get the vines up high so that they may get plenty of light and air. My fence is 5½ feet high, but this is too low so uprights are nailed to the posts, with single wires strung through staples a foot apart in them. This increases the height to 9 feet. The beans are planted on *both* sides of the fence and the whole trellis is covered during the summer with a dense screen of vines, heavily laden with big pods. Any kind of a fence will of course support Limas, and suburban dwellers who have long fences could perfectly well utilize them for the purpose. Single poles upright, sunk deep so that the eventual weight of the vines will not make them sag, are good, but a better method of growing is to plant them along a permanent lattice-work arbor such as grapevines commonly grow on—and, in addition to being ideally supported by such a structure they form a very pretty avenue of shade as well.

One further consideration remains. This is the planting itself. And it is this which causes the average gardener to fail with Lima Beans. In the first place beans of all kinds are very

tender; and they positively will not sprout in damp, chilly soil. In middle latitudes it is rarely worth while planting them until May first. In planting, the seeds should be pressed two inches into the soil with the eye down (the bean being held edgewise). This work should be done by hand. If the soil is hard, cover each seed with a handful of finely crumbled earth, which may be firmed down well over the planted seed. If heavy rains fall on a tough soil between the planting and the breaking through the ground of the seed, the surface must be worked—but very lightly and carefully to avoid injuring the brittle stems which are trying to push their way through the earth. As regards watering, Limas do not suffer greatly from drought for their roots are deep-plunging and their foliage affords shade. But sometimes watering seems advisable. Never water at the top however. My own method is to sink tin cans, perforated at the bottom, between every two plants if along the fence, or a can by each bean-pole. When drought comes I fill these cans once a week and the water is slowly and evenly distributed to the roots.

INTELLIGENT USE OF FERTILIZERS

Avoiding Mixing Things That Waste Each Other

TIMELY, intelligent use of fertilizers in the garden before we plant cannot possibly be duplicated by means of top-dressings, liquid manures and other late season stimuli no matter how valuable and effective they may be.

The wise and forehanded gardener will have already done much by planting a cover, or green manure, crop last fall—rye and vetch, clover, peas and oats. Perhaps, previous to that a dressing of manure was turned under and some lime raked in later during the winter, and manure spread ready for the spring plowing. If so well and good; if not here is the programme to follow as closely as possible, beginning immediately.

Wherever possible get stable manure and have it spread six inches deep all over the garden plot. Try to get well rotted manure including both cow and horse droppings, but if it is mostly the latter see that it is not burned out or “firefanged,” as indicated by a white, dusty, lifeless appearance.

At the right moment have this plowed or dug under, depending on the size of the garden. In either case make the job a good deep one. What the “right moment” is for your particular soil and location, only experience can tell; it is when the soil is moist but not wet, friable and loose but not dry and dusty.

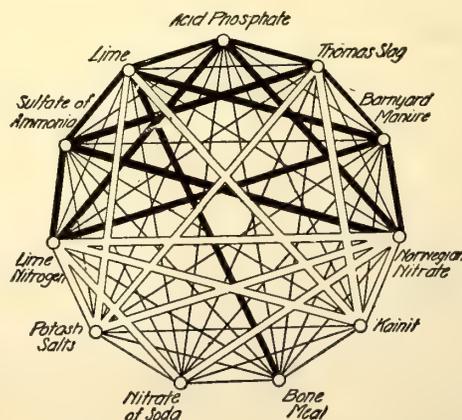
On the upturned furrows strew some form of lime unless you know from past seasons' experience that the soil is not sour; in that case better use a good dressing of bone meal. Rake or harrow this application in; and then (if you really want abundant, soul-satisfying crops) rake in a dressing of some well-balanced, all-round garden fertilizer. Save your nitrate of soda, sulphate of ammonia or other favorite “tonics” until your crops are up and really growing, and able

to digest, enjoy and benefit from them. As to cautions:—note in the accompanying diagram which kinds of plant foods should not be applied together. This is of special importance when you mix your own fertilizers, and worth considering even when you buy commercial plant food and also use manures, lime, or wood ashes.

If you apply “a little fertilizer” at seed planting time, as some advocate, mix the soil and fertilizer first and do not sow the seed directly in the dry fertilizer. Why not? Because plant food is taken into the roots in solution; fertilizers are dry and especially “thirsty” and will absorb the first moisture they can get. If this happens to be in a germinating seed or a lusty root-hair with which they are in contact, the fertilizer will play the vampire, the seed will be sucked dry (or as we usually say “burned”).

The most valuable fertilizers are the most soluble ones; and so are the ones most likely to be picked up by the water in the soil, which, if the soil be sandy, rapidly leaches through and out. This, then is the reason for delaying the application of the highly soluble forms until the plants are old enough to snatch the “soil soup” as it trickles past their feeding roots.

As to lime, the more the average soil chemist learns about it, the less he is generally willing to affirm as to its true relation to soil fertility and plant feeding. It does appear certain, however, that it helps put in usable form the plant food that already exists in the soil, and that so long as we keep our ground reasonably well supplied with the elements essential to plant growth, we can safely work in some form of lime whenever the opportunity offers to do so without conflicting with other fertilizing practices. Look at the adjoining diagram.



TO MIX, OR NOT TO MIX?

The materials formed by the white bands may be mixed and applied together, but not for storage. The thin black lines join materials that can be mixed at any time. Do not mix, nor apply together the substances joined by heavy black lines, as they re-act destructively on each other

A NEW DISCOVERY FOR THE LILY LOVER

Easter Lilies can be Raised to Flowering Size in an Ordinary Greenhouse
in as Short Time as the Common Perennials for the Open Border

THOUSANDS of enthusiastic gardeners whose greenhouses flourish with Easter Lilies, regularly buy imported bulbs that they might just as well have had all the satisfaction of growing. In gardening circles it has been so long tacitly accepted that Easter Lilies could only be grown from imported bulbs that we have become accustomed to rely on the outputs from Formosa for the type (*Lilium longiflorum*) or from Bermuda whence comes the very popular *Lilium Harrisii* (variety *eximium*). But this recognized "fact," like a good many others of a limiting nature, could not stand against real gardening enthusiasm; and it has been shown that the Lilies can be raised from seed in this country.

Of late years Lilies have become increasingly popular and while maintaining all their predominance at Easter time they have also become a very general all-the-year favorite. But as their popularity has increased it has been noticed with apprehension that the imported stock became more and more prone to disease.

The discovery and proof that the Easter Lily can be grown from seed in this country is therefore a very significant event, especially as the home grown plants are more healthy and stronger than their imported rivals.

The first effort at home production was made some years ago by Mr. George W. Oliver in the Department of Agriculture greenhouses at Washington. Recently the work has been taken up by the Department of Floriculture at Cornell, Mr. C. L. Chien and Mr. A. R. Betchel carrying out some very exact investigations under the direction of Professor E. A. White, with the result that now we can have Lilies whenever we want them.

THE little seedling Lilies are grown on under just the same cultural conditions as when Lilies are grown commercially. The flowers are hand pollinated and cross fertilization is essential. When the stigma is fertilized by pollen from the same flower the resulting seeds are not only few in number but those

that are obtained are weak and the plants sickly. Of all plants in the garden none are more easily hand pollinated than Lilies because the parts are so large and conspicuous. Pods mature in about two months. Seeds are sown in October in a soil to give good drainage—one-third garden loam, one-third leaf

mold, and one-third sharp sand—in well drained flats. The seeds are covered lightly with a mixture of leaf mold and sand and the flats covered with glass and set in a temperature of 55 degrees.

In six weeks there will be a vigorous crop of seedlings and in three months they may be potted off into two and one-half inch pots in a mixture of one-half finely sifted garden loam, and one-half leaf mold. The plants are kept cool and somewhat shaded during the spring and summer when growth is slow. A bulb forms during the summer, and during the periods of experimenting at Cornell they were twice repotted so that by October they were in six-inch pots. At that time a few actually began to flower—one flower to a stem. These were cut and the plants repotted. New growth immediately starts, and another flower stalk by April bears three or four flowers, strong and sturdy—sometimes five and six flowers. And after all eighteen months is not a long time from seed to such a crop of flowers.

Easter Lilies Are Hardy!

IN ADDITION to the Cornell experiments that show us that we can have Lilies indoors whenever we want them, there are being carried on at Washington investigations

that promise information and opportunities of even greater value and significance. Already they have led Mr. David Griffith of the Department of Agriculture, who is in charge of the work, to declare that as outdoor garden flowers Easter Lilies "go through both our severely cold and severely warm winters perfectly; and that when properly handled there is no more danger from winter injury than there is with Tulips, Narcissus, or Hyacinths."

The most important single feature of this proper handling is



IN BLOOM FOR THE SECOND TIME IN EIGHTEEN MONTHS FROM SEED

Few attempts to raise bulbous plants from seed are ever made by the amateur, yet few things will yield returns as substantial within a year and a half as these five great fragrant blossoms topping the sturdy stalk

apparently the time when the bulbs are planted. "What we need to do," says Mr. Griffith, "is to plant early enough for the bulbs to get a good hold on the ground, but late enough so that they do not reach the surface before spring." This is made necessary by the fact that so long as favorable moisture and temperature conditions obtain the plants will not become dormant but will go right on growing and producing shoots, which, of course, are readily susceptible to injury.

As to depth, it was first advised that eight inches was necessary to insure protection, but subsequent knowledge has led to the recommendation that four inches is plenty deep if the time of planting is carefully chosen. Heavy feeding is essential and can well consist of generous applications of commercial fertilizer worked into the soil *before* the bulbs are planted, supplemented by a mulch of strawy but well-rotted manure. The thorough tillage of the bed or border should also be completed before planting time as cultivation or weed destruction by means of implements later on is almost certain to cause trouble by injuring the thick growth of surface roots sent out by the bulbs. Weed prevention and also the condition of "cool feet" which all Lilies appreciate are best accomplished, in Mr. Griffith's opinion, by planting thick enough so that the plants shade the ground almost completely and by maintaining a mulch throughout the season. Such weeds as then appear are best removed by hand.

After the first season, when the time at which the bulbs were planted largely determines their ability to go through the winter safely, danger of winter injury is practically eliminated by a remarkable ability exhibited by the plants to adapt and adjust themselves to climatic conditions. In other words, "if the stems which have flowered are allowed to function until cut down by frost the growth of the new bulb for next year's production is very much delayed," sufficiently, in most cases, so that the resulting stem or shoot will not appear above ground until the following spring.

This has, in fact, been the condition in Mr. Griffith's home border at Takoma Park, near Washington, where Easter Lilies have been growing since the fall of 1916 undisturbed except that on one occasion they were dug up late and immediately reset in order to thin out the superfluous bulbs produced by natural propagation. Even last winter when the unusual mildness brought about considerable top growth in February and March, a late cold spell during which the temperature fell to 22 degrees did not injure the plants.

MR. GRIFFITH recommends the growing of Lilies for outdoor as well as indoor use from seeds rather than bulbs. The slight delay involved is more than overbalanced by considerations of economy, freedom from disease and increased interest—or should be in the case of most of us. To this end seed obtained from pollinations made about Easter time (or purchased as the case may be) are planted in flats in mid-January and the seedlings are moved to two-inch pots in March and out into the field in late April or May. Here, according to the Washington experiments, they will begin to flower in late July and will continue to bloom scatteringly until stopped by frost. They may either be left as a permanent planting or

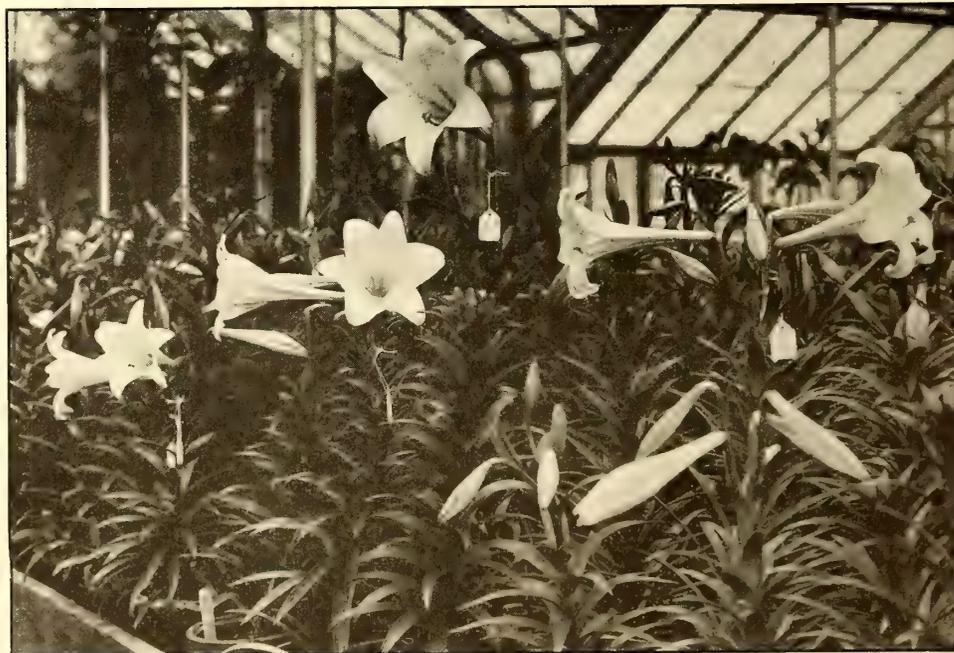
taken up, potted and flowered indoors during the winter. In the case of some of the 9,000 seedlings so handled at Washington, plants dug up and potted in December after a temperature of 15 degrees had been recorded soon began to develop new, vigorous growth; while others, taken in a short time before, when nothing colder than 26 degrees had been experienced, went right on growing, developing buds and opening those already formed as though nothing had happened.

That these Lilies may come to occupy a place in the garden commensurate with their loveliness seems within the probabilities, if disease-resistant plants can be produced. Persistent raising of them here, from seed under conditions more favorable for one reason or another than those prevailing in the warmer sections to which we have always looked for our bulbs, may bring about this highly desirable result—now that we know how reliably hardy the Easter Lily really is. All Lilies lend themselves preëminently to naturalistic planting and this variety is of course no exception. And though we have a white Lily already somewhat



A PAN OF LILY SEEDLINGS THREE MONTHS OLD

Doubtless it is frivolous to call them Lili-putians at this time, but it is a name that seems to suit them!



WITH ALL THE AIRS AND GRACES OF MATURITY THIS IS STILL A BENCH OF SEEDLINGS

As yearlings many will produce a single blossom and from the very beginning plants raised here from seed are stronger and healthier than the imported bulbs

common in our gardens (*Lilium speciosum album*) another will not be unwelcome.

It is perhaps not amiss to say in passing that the Easter Lily of commerce is not the true Madonna Lily. The latter is *Lilium candidum*, native to southern Europe and southwest Asia—the flower which tradition says is the true Lily of the Bible. This is variously known as Lent Lily, Madonna Lily, Bourbon Lily, Annunciation Lily, and St. Joseph's Lily; and it too is a hardy and beautiful species, though not so large-flowered as the more commonly grown *Lilium longiflorum* or Easter Lily of the florists—and of this story of raising the plant from seed. As a matter of fact almost any of the Lilies will grow readily from seed.

LILIES MADE TO ORDER

HOWARD ELLSWORTH GILKEY

Horticultural Dept., University of California

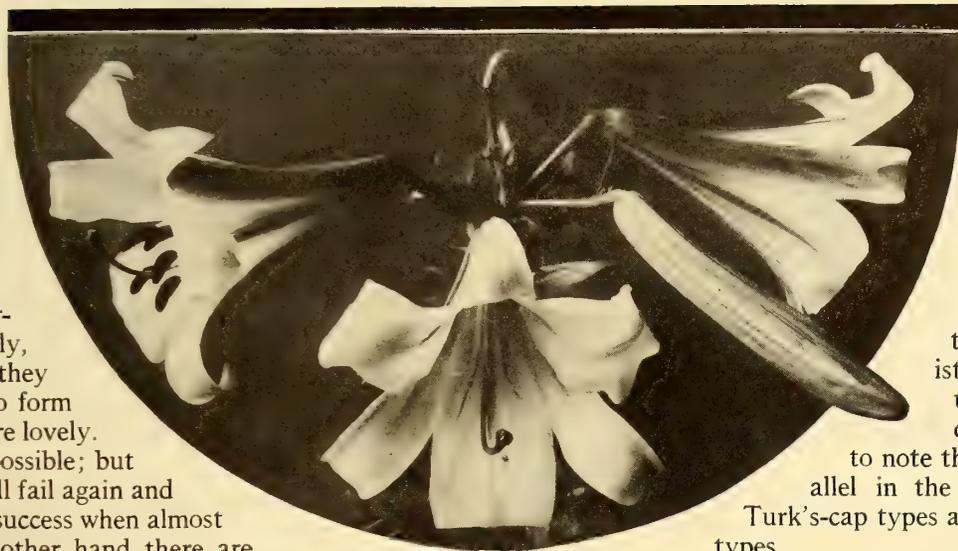
The Magic Spell of the Lily that has Captured Every Great Hybridist Still Offers a Rich Field for Experiment in Everyman's Garden

THE Lily is lovely enough as it is." Perhaps! But is the family hardy enough in all its members? Is it sufficiently fragrant? Does it carry enough blossoms? There are lots of excellent qualities present in the different members of the family, and it is possible that they might be recombined to form something infinitely more lovely. Lily crossing is not impossible; but often a certain cross will fail again and again—only to prove a success when almost despaired of! On the other hand there are several crosses which result in abundant seed. All the Lilies that we grow in any quantity are true original species. It is surprising that there are so few hybrids in a family of plants so replete with distinct and charming species.

For the amateur would-be hybridist the Lily family has decided attractions because the large size of the parts of the flower makes the necessary manipulation quite easy. Perhaps some others will find this family as alluring as I have. The first time I ever made any Lily hybrids, I had neither parent of the cross I proposed to make, but a friend was the proud possessor of a fine bed of Leopard Lilies, growing right in the open in full sunlight and he allowed me to make use of his plants. The other parent was *L. Parryii*. Cut flowers were sent from the mountains and had to be expressed seventy-five miles.

It took four years for those hybrid seedlings to bloom; but it doesn't take a great stock of patience to wait that long, when you have plenty of other garden treasure to care for. When the hybrids blossomed, they proved to be great, golden-yellow, sweet-scented Leopard Lilies remarkably uniform and seemingly a perfect blend of the two parent species. The segments curved back at the tips less than in *L. pardalinum*, and much of the trumpet shape of *L. Parryii* was retained; their glory was their wonderful fragrance.

Lilies are all natives of the Northern Hemisphere, and fall readily into two groups, those native to the Old World, and those native to the New World. These groups may again be subdivided roughly into European and Asian, and Eastern and Western American divisions respectively. Of course there are intergradations and occasions where an Asian Lily, for example *L. tenuifolium*, has more real affinity for its European relatives than for its Asian allies, but in general the affinities



QUEEN OF ALL—THE REGAL LILY

Pure glistening white melting to pure lemon in the depths of the throat

L. chalcedonicum, the reddest of the big Lilies; and the graceful little Siberian Coral Lily (*L. tenuifolium*) are among the most alluring. Raise the last from seed. It will bloom in from one to two years. The Nankeen Lily (*L. testaceum*), reputed to be a natural cross between *L. martagon* and *L. chalcedonicum* is perhaps the rarest as to color and should prove almost as hardy as the Madonna Lily. The cross has never been repeated. Someone should try to duplicate it.



EMASCULATING THE UNOPENED BUDS

In the lower flowers, treated several days earlier and since opened, the absence of the anthers is plainly discernible

for crossing are almost within geographical limits. An evolutionist would say that all the forms common to one region were descended from one common ancestor, and had arisen as mutations from the common source; hence the degree of affinity existing between the individuals native to the same country. It is interesting

to note that each form has a parallel in the other group; all have Turk's-cap types as well as trumpet-shaped types.

Of the European Lilies, we really grow but one, the Madonna Lily (*Lilium candidum*). The Turk's-cap Lily (*L. martagon*), and its beautiful white variety, album; the brilliant

L. chalcedonicum, the reddest of the big Lilies; and the graceful little Siberian Coral Lily (*L. tenuifolium*) are among the most alluring. Raise the last from seed. It will bloom in from one to two years. The Nankeen Lily (*L. testaceum*), reputed to be a natural cross between *L. martagon* and *L. chalcedonicum* is perhaps the rarest as to color and should prove almost as hardy as the Madonna Lily. The cross has never been repeated. Someone should try to duplicate it.

Lilium marhan, a hybrid between *L. martagon* and *L. Hansonii*, is becoming more common, but the cross should be easy to duplicate. And perhaps you may get something quite distinct, for the same cross does not always result in the same way! *L. tenuifolium* var. Golden Gleam would scarcely be recognized as a hybrid. Yet according to the records it came from seeds produced by pollinating *L. tenuifolium* with *L. martagon*. It may be that the gardener in the east has a good opportunity, right at his own door, for experimenting with the Lilies native to his own locality. With such a variety as is afforded by *L. superbum*, *L. carolinianum*, *L. philadelphicum*, *L. canadense* and *L. Grayii* there should be results worth trying for; that is, if seeds can be had from the trials.

The Lilies of Western America form an interesting and charming group. The majority of them thrive in our gardens, if stable manure is kept away from them. For barbaric splendor plant the Leopard Lily (*L. pardalinum*), and the Humboldt Lily. Their warmth of gold and copper and vermilion give a dash of color and life to a shaded, somber hillside that is worth any effort. If you have a bit of cañon, plant them both.

Pardalinum can be obtained in some deep vermilion and crimson shades that are extremely beautiful. It may be that one of these will some day prove to be the source of the big red Lily the world is looking for. When ordering *L. Humboldtii* be sure to specify the variety *magnificum* as it is a sure bloomer and a vigorous grower; the flower, heavily blotched with orange and vermilion over a gold background, is hardly so beautiful as the chaste, clear orange blossom of the type, but you are certain to have flowers when you plant it.

Several of the Pacific Coast Lilies excel any other group in the genus for grace, delicacy of coloring, and exquisite fragrance. *L. washingtonianum*, the Redwood Lily (*L. rubescens*), and *L. Parryii*, are a beautiful trio of shade-lovers. Give them plenty of leaf-mold and good drainage—but give them lots of water, too. All three are deliciously fragrant. *Lilium Parryii* may well rank as one of the sweetest of all flowers. The Washington Lily and the Redwood Lily are tall growers with regular whorls of leaves arising at uniform intervals along the stalks. Both are trumpet-shaped, opening white or pinkish and fading to a wine-purple with age. The latter has segments recurving more closely at the tips, and fades to a deeper wine-color. The Mountain Lemon-lily (*L. Parryii*), is more rare, shorter, and does not bear a great number of flowers like the others. It is a true trumpet shape, and in color a beautiful glowing lemon, often unsullied by a single tinge of foreign color, and yet again faintly spotted with brown.

Other California Lilies worth mentioning are *L. parvum* from the Sierras with tubular erect flowers in orange or yellow, and *L. Roetzlii*, a good yellow Turk's-cap. The long-lost *L. Kelloggii* is a gem, like a miniature Leopard Lily, but with a ground color of blush-white dotted lightly with crimson. I have seen it but once, but I shall always remember it as among the daintiest flowers.

California Lilies normally produce excellent crops of seed and hybridize readily. The Leopard Lily a good seed bearer, crosses readily with the Humboldt Lily, and the progeny is very vigorous and free-flowering. This would be a good cross for any one to start with in plant hybridizing.

Taken as a whole, the Lilies of Japan and China comprise among their number the largest, the hardiest, and the most beautiful of the entire genus and seem to offer the most promising field to the hybridist. The immense, waxy, fragrant flowers of the Gold-banded Lily have won for it great popularity among Lilies. But it does not usually last more than two or three years in cultivation. Still, I love it well enough to invest in a case of new bulbs every year. *L. speciosum* (the *lancifolium* of the florists) is a universal favorite on account of its vigor and beauty. The Tiger Lily comes from the Far East, also. Among the best known of the large trumpet-shaped Lilies is the Easter Lily (*L. longiflorum*) and all its varieties. *L. Ukeyur* a reputed hybrid is as a matter of fact one of the many forms of *longiflorum* like the Easter Lily.

Lilium Henryii is probably the hardiest Lily in the world, and the most resistant to the Lily disease. It bears great quantities of seeds, which

germinate quickly and bloom in three years. It multiplies rapidly by means of bulblets along the stem below the surface of the ground. It will grow in any kind of soil, and in sun or shade. It is a tall grower. I have seen it nine feet high bearing more than thirty blossoms with a bulb four pounds in weight and twenty-two inches in circumference. The foliage is dark and leathery in texture, able to withstand insects, wind, and disease. The petals are recurved of medium size, and a delightful light orange in color. This Lily was discovered in 1888 by Dr. Henry in the province of Ichang, growing at a great elevation in great masses drooping characteristically over the brink of a steep limestone gorge, with myriads of interlaced golden blossoms. This was only the forerunner of other notable discoveries in China and our stock of desirable hardy plants has been greatly enriched within very recent years by the introduction of two Lilies which at once became popular. These are *Lilium regale* and *L. Sargentiae*.

With the advent of these and the older *L. Henryii*, a new era dawned in Lily culture. Here is a trio of Lilies which thrive in ordinary loam, with full exposure to the sun. They seed freely and abundantly. The Regal Lily, well named indeed (*Lilium regale*) threatens to take rank as the "Queen of All Lilies." It has a long trumpet, which flares widely. The broad face of the segments expands a pure glistening white that melts almost imperceptibly to a beautiful light lemon deep in the throat, which is devoid of the objectionable green seen in *longiflorum*.

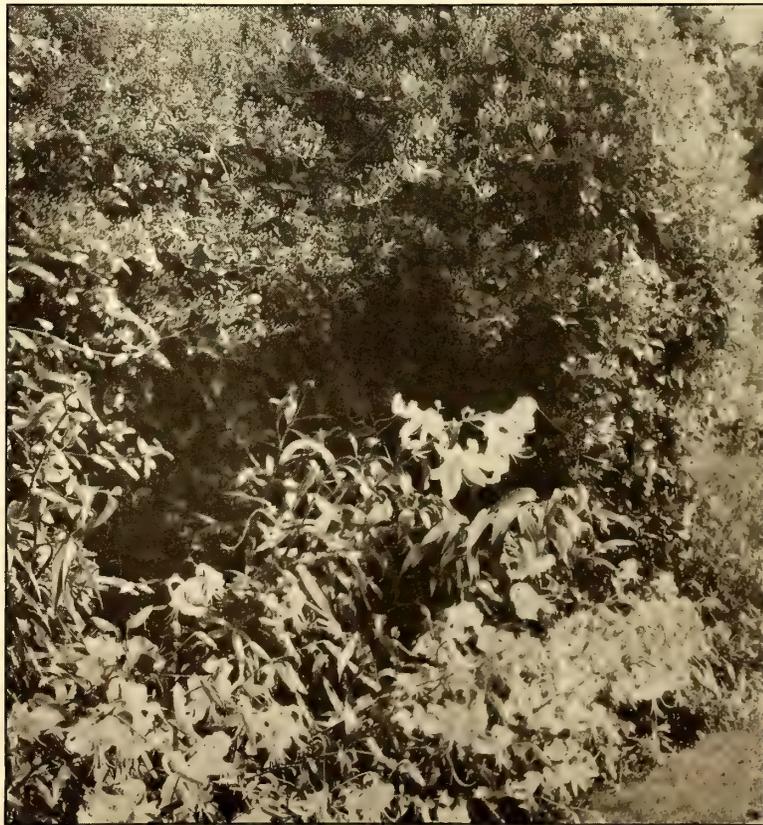
Lilium Sargentiae is much like *L. Brownii*, but it is stronger and taller. The blossom is narrower than in *regale*, white inside with purplish streaks overlaying white on the outside. It is not heavily scented. In leaves and habit it approaches *L. Henryii* and also produces bulblets in the axils of its leaves.

May we not look to these Lilies to produce hybrids that combine beauty and vigor? With the idea of combining the greatest beauty with the greatest vigor, for the last five years I have tried to secure a cross between *L. Henryii* and *L. auratum*. I haven't succeeded yet, but I am prompted to continue from the fact that I get an encouraging growth in the capsules at the start. However, after attaining a certain size, they stop growing and shrivel. Some one in a different locality may be more successful.

The cross with *Lilium Henryii* which produced *L. kewense* should be tried in every garden. *L. Brownii* was the other parent. An unlikely result one would think, but with plants "you never can tell." *L. speciosum* is so much like *L. Henryii* that the latter is often called the "yellow *speciosum*," yet I have tried to cross the two again and again, without even the slightest swelling of a capsule to encourage me.

There is a tradition of a cross between *L. auratum* and *L. speciosum*, made away back in the 'sixties when *auratum* was first introduced. It is unfortunately extinct, but is said to have been a magnificent flower. Will some enterprising enthusiast try to replace this long-lost treasure?

[Some remarks on the actual work of "crossing" will be found on page 138 of this issue.]



THE PLACE OF THE LILY IN THE GARDEN

Surroundings that are naturalistic as this Clematis hung wall in the garden of Mr. Hugh D. Auchincloss at Newport, R. I., emphasize the rich beauty of all the great Lily tribe and are their proper environment

WHY THE HOUSEKEEPER GARDENS

SARAH M. McCOLLOM

Her Personal Interest in, and Attention to, the Garden Alone Will Insure that Full Return Which, as "General Manager" of the Business of Home, as Well as Chief of Commissary, She Demands



LIME SHOULD BE APPLIED LIGHTLY AND OFTEN AND MANURE SHOULD BE WELL WORKED OVER

The annual use of enough lime to whiten the ground without actually covering it, as shown at the left, is best; while such forking over and mixing as the compost heap at the right is undergoing assures its prime condition for application to the ground



THE one big factor that causes disappointment and subsequent failure in garden making is lack of interest. For lack of interest and neglect travel together. That was always the trouble between my garden and me, and I suppose it would still be the same if I had not suddenly awakened to the fact that I had really a commercial enterprise out there in the back yard. Whereupon I was interested—since I have the "commercial instinct" I fear; and becoming interested, I began to give attention to the garden—real attention—with what were, to me at any rate, amazing results. For I had never really believed in the kitchen garden; it had seemed just a fad to be somewhat indulgently regarded, until the war set everyone to talking about it seriously.

Of course all these results went into my accounting pages; and of course I am going to draw on these to prove my thesis—not in wearisome detail but in round numbers. Our particular garden plot is approximately fifty feet square. For this the seeds cost \$5.90, plants (early Cabbage, Cauliflower, Big Boston Lettuce, Tomatoes, Eggplant, Peppers and Celery) were \$2.45, and manure, labels, poles, pea brush and two bags of hydrated lime were \$13.55, giving a total outlay of \$21.90 which I am going to call \$23, inasmuch as there were some further trifles such as raffia for tying things up and tobacco dust and such—not amounting to a dollar all told, however.

The plan of the garden speaks for itself, and shows the amount planted of each thing. The quantity gathered of each vegetable and the number of weeks of their bearing are shown in the accompanying table.

What Was Gathered, and When

Radish	May 17th to July 1st	24 bunches
Spinach	June 1st to July 10th	12 pecks
Onions	June 6th to July 31st	22 bunches
Lettuce	June 8th to Oct. 15th	149 heads
Swiss Chard	June 15th to Oct. 15th	14 pecks
Peas	June 23rd to Aug. 10th	58 quarts
Parsley	June 23rd to Oct. 15th	60 bunches
Carrots	July 1st to Oct. 15th	41 doz.
Beets	July 4th to Oct. 15th	37 doz.
String Beans	July 5th to Oct. 15th	73 quarts
Cabbage early	July 10th to Aug. 10th	22 heads
Spinach, New Zealand	July 10th to Oct. 15th	40 pecks
Corn	July 28th to Oct. 6th	34 doz.
Tomatoes	July 29th to Oct. 15th	65 quarts
Lima Beans	Aug. 2nd to Oct. 6th	36 pecks
Eggplant	Aug. 11th to Oct. 6th	11 doz.
Peppers	Aug. 22nd to Oct. 15th	10 doz.
Cauliflower (late)	Sept. 17th to Oct. 15th	15 heads

The Following Were Canned or Stored for Winter

30 cans Tomatoes	2 bushels Ruta-bagas
15 cans Beans	1 bushel Onions
12 cans Lima Beans	1 bushel Carrots
6 cans Beets	36 heads Cabbage
12 cans Succotash	$\frac{3}{4}$ bushel Beets
8 cans Spinach	1 bushel of Parsnips
12 bundles of Parsley and Herbs	80 heads Celery
	$1\frac{1}{2}$ bushels Tomatoes

To produce the foregoing the following quantities of seeds and plants were used:—

1 pint Bush Beans, Black Valentine; 1 pint Pole Beans, King of Garden; 4 oz. Beets, Electric; 1 oz. Swiss Chard; 2 oz. Carrots, Guerande; 1 qt. Corn, Golden Bantam; 1 oz. Lettuce, Big Boston; 1 oz. Lettuce, Ideal; 2 oz. Onions, Yellow Danvers; 1 qt. Onions (sets) white; 1 pkt. Parsnip, Hollow Crown; 1 qt. Peas, Gradus; 1 pint Peas, Champion of England; 4 oz. Radish, French Breakfast; 4 oz. Spinach, Long Standing; 1 pkt. Spinach, New Zealand; 1 oz. Rutabaga, Purple Top; 1 pkt. Cabbage, Flat Dutch; 1 pkt. Cauliflower, Snowball; 1 pkt. Parsley, Moss Curled; 1 pkt. Thyme; 1 pkt. Sage; 1 pkt. Sweet Majoram. Plants: 2 dozen early Cabbage; 2 dozen Early Cauliflower; 3 dozen Big Boston Lettuce; 3 dozen Tomatoes, large fruited; 6 Eggplant; 6 Peppers; 5 dozen Celery.

It was on May 17th that we had our first returns. Radishes—and we had them occasionally until July 1st. By that time they were so

strong we threw out the balance. June 1st brought the first Spinach, and it does not need an expert to tell that the first is the best. We had it until July 10th, when we started cutting New Zealand Spinach which lasted through the season so we were never without abundance of greens until frost. On June 6th we started to pick green Onions from the sets, and when the seedling Onions were large enough we thinned these and used the "thinings" for green Onions. And in fall we had about a bushel of full grown bulbs to put away.

On June 8th we gathered the first head of Lettuce. Peas were rather late, but that was a general condition, and the quality was wonderful when they did mature. We had these *every day* from June 23rd until July 20th and then practically every other day until August 1st when they succumbed to mildew. Carrots we started to use July 1st, Beets July 4th, String Beans July 5th, and of these vegetables we had a continuous supply throughout the summer. Corn was ready July 28 and our supply lasted until October 6th. Of course we did not have this

SELECTIONS FROM THE NOVELTY OFFERINGS OF THE SEASON

Looking Over the More Important New or Little Known Plants Available for This Year's Flower Garden

T MAY be true, as the proverb runs, that old friends are best; yet that does not prevent the making of new friends, which is one of life's pleasures. It is the same with the friends of the garden as with those which mark our human companionships. While treasuring many of the old-fashioned flowers, delight is also found each season in welcoming newcomers.

Naturally enough the supply of novelties this season is limited. During the war propagators were largely concerned with other things, and conditions since the war have not favored either the creation or the introduction of new plants. Still we find a few new species and varieties which seem decidedly worthwhile. Among them is *Adonis aleppica*, the so-called Syrian Floss Adonis, an annual which was described long ago in a few botanical works, and by some authorities considered as a synonym of *A. fulgens*, but has never before been introduced to American gardens. This new comer is described as three or four times as large as the common well known Floss Adonis and the color a shining deep, dark blood-red. As the plant grows only sixteen to twenty inches high, it can be used for bedding as well as for borders, and should also have value as a pot plant. It seems reasonable to suppose that it will make an excellent flower for cutting.

Another annual novelty which is being offered by a number of seedsmen is the Blue Laceflower. As a matter of fact it is simply a variety of the common Queen Anne's Lace, which though a weed is greatly admired and often used for house decoration. The flowers of this new variety are light blue in color and the finely laced foliage is similar in character to that of the ordinary Wild Carrot. Whether this annual will merit continued garden culture remains to be seen, but there are none too many good blue flowers.

Of late years few annuals have received more attention from hybridizers than the Sunflower. Mrs. Cockerell of Colorado gave us the Red Sunflower (and gave account of its origin in the GARDEN MAGAZINE for July, 1914), thereby accomplishing what plant breeders across the sea had long failed to achieve. In a year or two it was followed by the Pink Sunflower; and now comes another new variety called Dazzler which is receiving considerable attention from seedsmen this season. It is a sport of the cucumberfolius type and its flowers are rich chestnut in color but tipped with orange. In many ways these flowers resemble the Gaillardias, but undoubtedly can be grown in gardens where the Gaillardia is usually a failure. This new Sunflower is not a coarse creation and it grows only three or four feet high, making it a most excellent plant to use for filling vacant spaces in the ordinary border. Quite presumably it will seed itself, but not to an extent which will be objectionable. Another Sunflower, a selected development of some native *Helianthus* is being offered under the queer name "questifolius." Whatever its name may be the plant itself is a vigorous subject for late fall effect, flowering in profuse abundance of golden yellow till frost stops it. The plant grows six feet tall and flowers throughout its height.

For some time English Dahlia growers have been featuring Dahlias of the miniature type which can be used for bedding. These are now finding a market in this country. Several varieties are being put out, one of them, under the name of Peter Pan makes plants only two feet high and blooms freely when half that height. The small, anemone-shaped flowers appear in a variety of colors and are charming for bedding or to mass along a walk or drive.

Several of the coarser flowers have been given the attention of hybridizers in an attempt to make them more refined and elegant. Apparently the Zinnia has proved a popular subject for several interesting new varieties have been produced. One of them put out last year and grown only in a limited way is the Conical Zinnia which is cone shaped, as its name suggests, and calls to mind a miniature inverted bonnet. This year we have a dahlia-flowered Zinnia, with petals fluted like those of a Show Dahlia and so similar to a Dahlia that if the two flowers are placed together they can hardly be told apart. Then there are the new Victory Zinnias which resemble Anemones, and promise to be a marked addition to annuals for the multitudes.

The Double Cosmos is not wholly new, as different forms have been on the market for several years; these have been improved, however, so that those now offered are well worth growing.

Although comparatively new itself the splendid Verbena Helen Willmott, which came to this country from England has now been improved upon in the hybrid Rose Queen. This has aroused much interest among gardeners across the sea and it will be interesting to learn if it is received with as much favor here. The flowers are a lovely but delicate rose and somewhat lighter in shade than those of Helen Willmott.

No finer plants for flower boxes exist than the Petunias, and a remarkably handsome new kind with deep rose pink flowers is called Erskine Park Belle. It will bloom all season if the seed pods are kept removed and is excellent for beds and borders. Then there is the velvety, violet-blue Petunia which has been grown extensively in Europe for use in window boxes. Seeds of this Petunia had just begun to be disseminated in this country before the war broke out. The stock was very limited and only a few people had the plants, but more seed is now obtainable.

For years the Annual Mallow has been a satisfactory garden plant but now comes a new Mallow of quite different habit. It is called Sunburst, and grows so tall that it very much resembles the Hollyhock in appearance, this aspect being accentuated by the large size of the flowers. Unlike the Hollyhock, however, it blooms extensively from July until November. As with many strong growing annuals it is desirable to sow seeds in the house or in a hotbed.

The Central Experimental Farm in Ottawa has been giving much attention to the newer varieties of annual and perennial flowers, and it has just put out a list of those which have proved especially desirable. Among the most interesting is *Didiscus caeruleus*, a delightful annual with pale lavender flowers and growing about eight inches high. It blooms in late summer, and the flowers are recommended for cutting. This has been spoken of in the GARDEN MAGAZINE in recent volumes.

Another annual novelty which is described as of value is *Ageratum Mauve Beauty*, likable because of its very deep blue flowers. In common with other *Ageratum*s it blooms from July until frost and is excellent for a ground cover in borders.

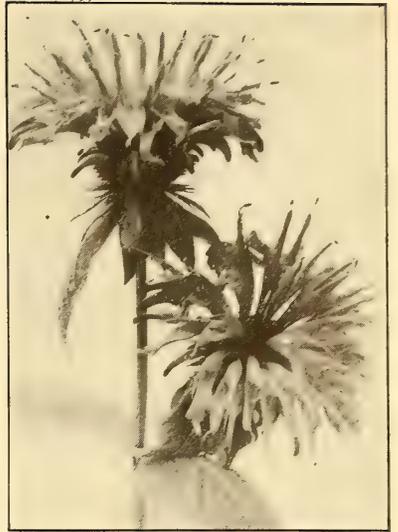
Anchusa Annual Blue has proven an excellent novelty, with flowers about the same shade and with the same intense hue as those of the popular Dropmore variety of the perennial *A. italica*.

Coming to perennials we find the list of novelties limited, indeed, especially if we want started plants. Judging from what has been said in the English papers the new hardy *Carnation* being put on the market is likely to meet a real need in

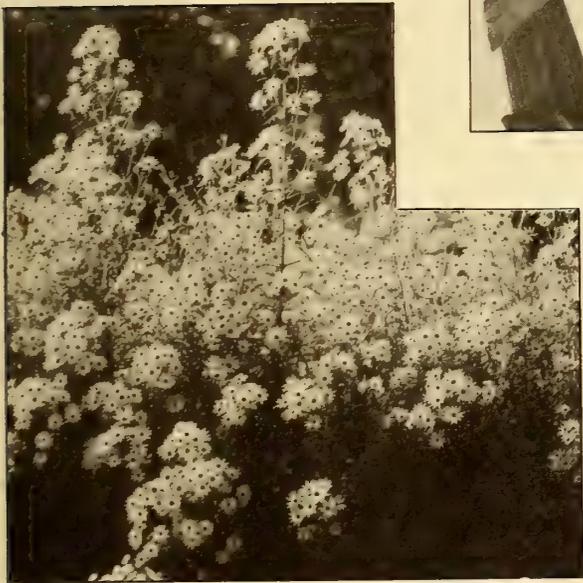
NEW CLAIMANTS FOR A PLACE IN THE GARDEN



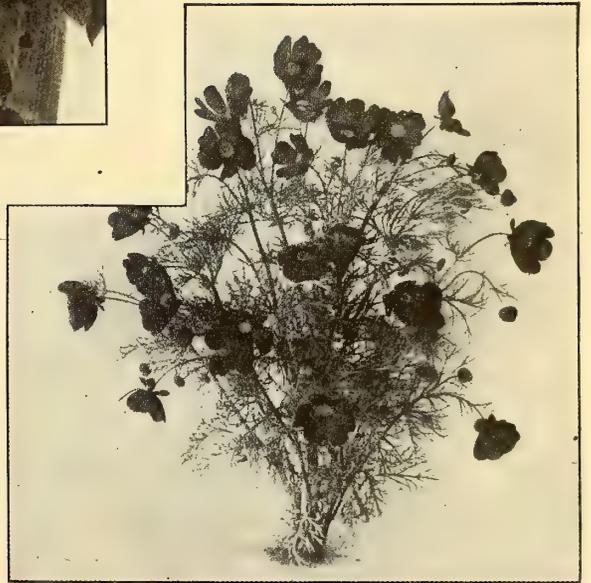
This decorative Dahlia, Mrs. Grace Beebe, in lavender and white is representative of the type of bloom that is in popular favor



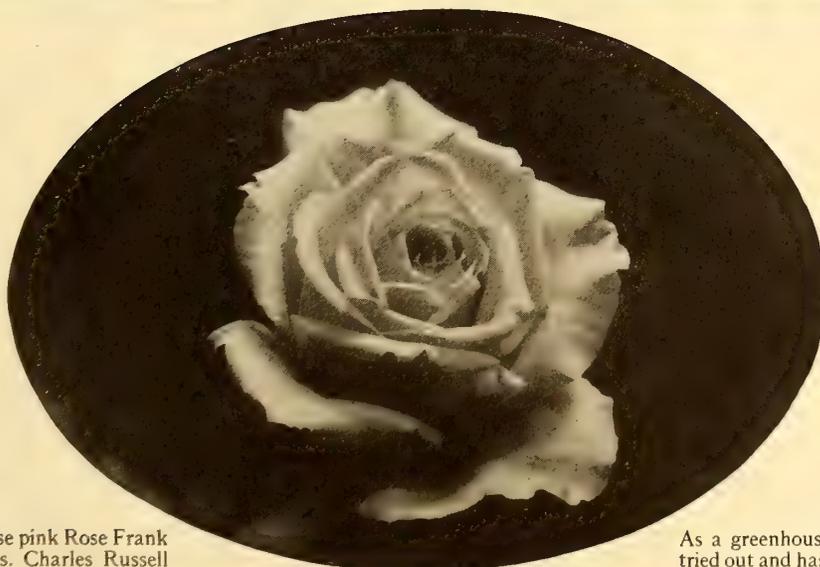
The name Cambridge Scarlet commemorates the place of origin and the color of a bright flowered Bee-balm



Quite remarkable in the greatly increased size of flower, the newer Montbretias are things apart. Star of the East is orange-scarlet, three inches across



For brilliant yellow in fall, repeating the color effect of Forsythia in spring the new six-foot tall Sunflower will be welcome (*Helianthus questifolius*)



From Canada comes this rich rose pink Rose Frank W. Dunlop, seedling from Mrs. Charles Russell

An old-time annual from Aleppo but not before offered for garden use is this brilliant scarlet Adonis aleppica. The flowers are three inches across

As a greenhouse Rose for cut flowers it has been tried out and has shown many good qualities already

town gardens as well as proving an addition to garden borders in the country. This was obtained by crossing a hothouse Carnation of the ever-blooming type with a hardy garden Pink. It is said that six years of this work, crossing and re-crossing, were necessary to fix the type. As now grown this Carnation has a delicious perfume and blooms practically all summer. Just how hardy it will prove in the North remains to be seen. Let us hope that it will turn out to be all that is claimed for it, for if so it will become a most important acquisition.

It would be a fine thing for gardens in general if their owners would banish the old fashioned Veronica or Speedwell, for it never was much better than a weed, and now that such splendid sorts as *Veronica longifolia subsessilis* can be obtained there is no excuse for growing inferior ones. A new variety fully equal if not superior to *V. subsessilis* is called Blue Ridge, having flowers of the deepest blue and a free blooming habit. With Amethystina in the spring and Blue Ridge in the fall, no other Speedwell will be needed in the garden.

Although it has been possible for a year or two to obtain seeds of *Lychnis Arkwrightii*, few if any plants have been offered in previous seasons. A small plant bloomed in the garden last year and it seemed to be all that is claimed for it. It is a cross between *L. chalcedonica* and *L. Haageana* and the flowers have deep, rich shades.

Then there is the new Oswego Tea (*Monarda*) Cambridge Scarlet, a plant with bright, deep red flowers which are fully as brilliant as those of the Cardinal Flower. Those who like brilliant scarlets in the garden will prize this plant.

Blue is considered a more refined garden color, and the list of good flowers having this color is rapidly being increased. A spurless Columbine catalogued sometimes as an Anemone-flowered *Aquilegia*, is being again offered—it is not new by any

means, but is not well known. The blossoms always attract attention because of the missing spurs and the color is an attractive light blue. It will bloom very early if seeds are started under glass in the spring. Then there are some new *Aquilegias* known as Erskine Park hybrids, getting the name from the fact that they were originated at Erskine Park, a famous estate at Lenox, Mass. They are the result of repeated crosses made between the best American and European varieties. They, too, will flower the first year from seeds sown indoors in March, but probably the better plan will be to start them in a coldframe in June and transplant them in the fall to bloom the following year. The colors include blues, lavenders, whites, yellows, scarlets, and pinks.

It has long seemed strange that more generous use has not been made of *Montbretias* and that hybridizers have not secured greater development in the matter of size. Few bulbous plants are more satisfactory for fall flowering. They make a splendid addition to the hardy border and are unexcelled for cutting. It is a matter for congratulation that a magnificent new type has at last been put out. Probably this is the forerunner of still greater improvement. Star of the East is a magnificent flower and will prove a revelation to people who know *Montbretias* of only the common type. Mr. George Davis, a famous hybridizer, is responsible for the remarkable advance in these plants. He has obtained several hybrids of great merit, but the one mentioned is among the finest because of its strong growth and the size of its blooms, which may measure three inches across, putting them in a class with *Gladiolus*. The color is an attractive bright orange with a lemon-yellow throat. Quite naturally the price is high, but there are other new giant flowered *Montbretias* which are much cheaper and yet which are far ahead of the old fashioned flowers.

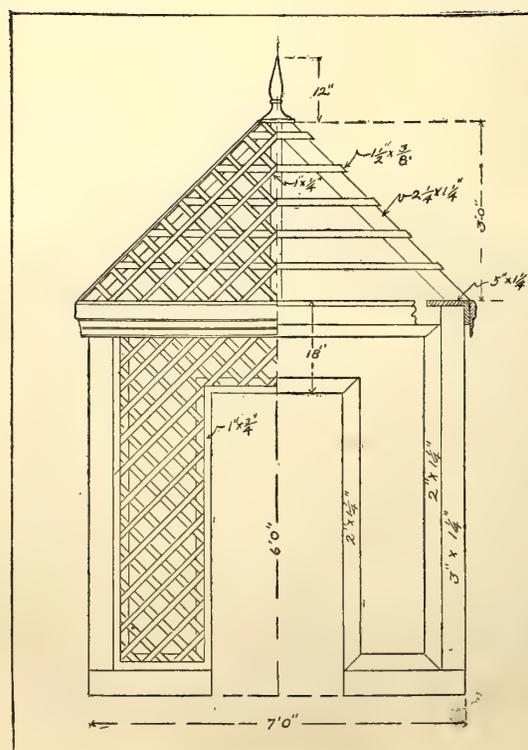
A LATTICE GARDEN SHELTER SEEN IN FRANCE

E. C. STILES

Landscape Architect

DESIGNING suitable summer houses or garden shelters for private gardens, where the erection of large stone or heavy frame shelters would be altogether out of place, has taxed to the utmost the ingenuity of architects and garden designers, and has given rise to many curious and complicated little structures which are often entirely at variance with the architecture of the house, the size of the owners' pocket book, and the general treatment of the grounds.

The accompanying illustration offers a design which is simple in character, moderate in cost, and easy of construction. The design was taken from a little garden in the suburbs of Angers while the author was en route to America. The floor plan is square and all four sides are similar to the front elevation, with the exception of the doorway, which appears only on the front side. The construction is light



yet strong, as may be attested by the fact that the original has withstood the rainy climate of France for a considerable period of years without any evidence of repair, painting and other upkeep. Constructed of cypress and given two or three coats of good lead paint such a structure will endure for many years in our climate without further attention.

THE materials may be secured as per this sketch upon consultation with any mill working establishment, for be it noted that the stock involved is all simple, and of standard size, except the turned ornament at the top of the roof and the moulding or trim where the roof joins the upright.

A small structure of this type will harmonize with any form of architecture and will be suitable in scale to the suburban garden, and at the same time not out of place in a larger area.

THE ROMANCE OF OUR TREES— VII. THE BEECHES

ERNEST H. WILSON

Assistant-Director, Arnold Arboretum of Harvard University

A Modern Tree as Trees Go, and the Clean-limbed Beauty of the Species Suggests Youth and the Athlete Though the Oldest Specimens Are as Ruggedly Ancient in Appearance, and Actually, as Any Trees We Have

AMONG the familiar trees of the northern forests none is more stately and beautiful than the European or Common Beech (*Fagus sylvatica*). A clean looking tree and the epitome of vigor, it has been aptly termed the Hercules and the Adonis of European forests. There is something peculiarly attractive about this tree at all seasons. In winter the pale gray, smooth bark and the delicate tracery of myriad branches suggest a light, white mist hovering in and about the trees; in spring its clear green mantle of foliage is exquisitely delicate, yet it soon assumes a darker hue and forms a dense and cooling shade in the summer heat; and in autumn its warm yellow- to russet-brown tints and the long persistence of the dead leaves on the branches make it a bright note in the chill landscape.

Again, the ground beneath Beech trees is generally dry and free from weeds and is inviting to sit and rest upon. Their crowns are broad and far-spreading; the middle and upper branches are sharply ascending, the lower spread horizontally, often downward to midway of their length but are upturned at their extremities—though there are famous trees, like the Newbattle Beech near Dalkeith, some eight miles from Edinburgh, in which the lower branches lying on the ground have taken root and developed into independent trees. The branches of the Beech are very numerous and crowded and, having a smooth bark, are particularly liable to cross and grow into each other and, as it were, inosculate. Hence, according to some old authorities, it was this tree that first gave the idea of grafting.

GEOLOGICALLY the Beech is not ancient, having apparently first appeared in Tertiary times; it is in fact an aggressive, modern type of tree. Lyell in his "Antiquity of Man" speaks of it as follows:—"In the time of the Romans the Danish Isles were covered as now with magnificent Beech forests. Nowhere in the world does this tree flourish more luxuriantly than in Denmark, and eighteen centuries seem to have done little or



CLAD IN SNUG GRAY SATIN IS THE AMERICAN BEECH

Which is broidered with the lenticels of the bark and accented by the sharp shadows which the delicate branches cast under a winter sun

nothing toward modifying the character of the forest vegetation. Yet in the antecedent bronze period there were no Beech trees, or at most but a few stragglers, the country being then covered with Oak. The Scots Pine buried in the oldest peat in Denmark gave place at length to the Oak; and the Oak after flourishing for ages, yields in its turn to the Beech; the periods when these three forest trees predominated in succession tallying pretty nearly with the ages of stone, bronze, and iron in Denmark."

Fossil remains of the Beech have been found in neolithic deposits in the Fen district and elsewhere in England, and in the pre-glacial deposits in the Cromer forests bed. Julius Caesar stated that *Fagus* did not occur in England; but apparently the tree he meant was the Chestnut (*Castanea*). Yet the mistake is a curious one, for the Roman, Pliny, described as *Fagus* a tree which cannot be anything else than the Common Beech. However, the *Fagus* of the old Greek philosopher, Theophrastus, was undoubtedly

the Chestnut; and Virgil's statement that *Castanea* by grafting would produce *fagos* seems to indicate that the name *Fagus* was in common use among the Romans for the Chestnut.

IN ALL there are ten species of Beech now recognized, eight of which are growing in the Arnold Arboretum—and it is doubtful if any other garden is so fortunate. And though we are here primarily concerned with the Common Beech, it is not out of place to say a word or two about the other species. They all have the same general appearance and cannot be mistaken for any other tree. All have the same sort of thin, firm, smooth, light gray bark, and the leafage and the character of the branches and their disposition is much the same. They differ one from another in the shape and character of their fruits, and in the habit of the bole.

In the Common Beech the bole or trunk is single, and this obtains in one Japanese species (*F. japonica*) and one Chinese (*F. lucida*). In another Japanese species (*F. Sieboldii*) and a



GROWN IN THE OPEN THE COMMON BEECH BECOMES A MAGNIFICENT GREEN SPHERE

This species (*Fagus sylvatica*) which is as much at home here where it is very generally planted, as it is in its native British soil, is one of the finest of low-spreading shade trees available and too many of them can never be used

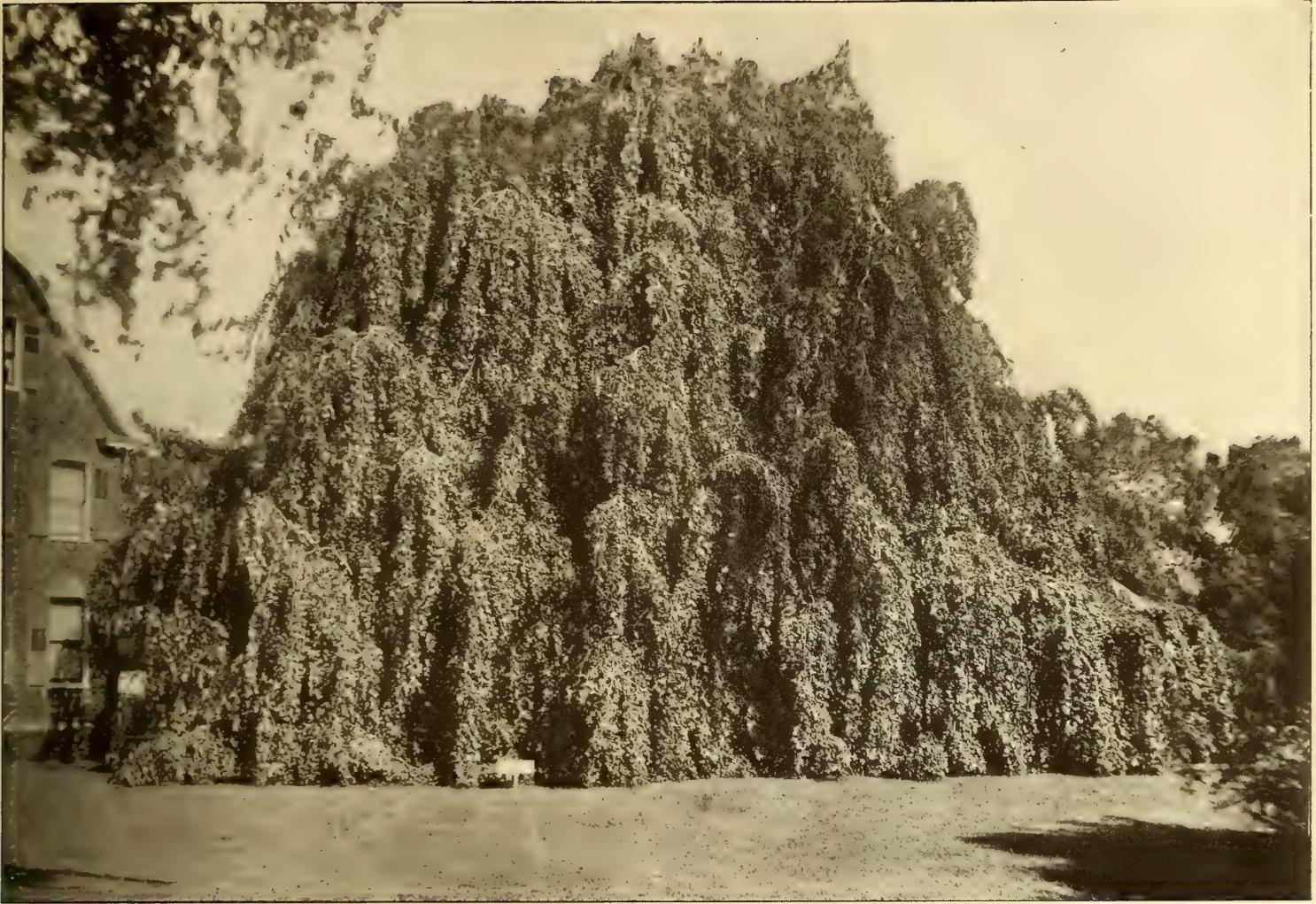
Chinese (*F. Engleriana*) the trunk divides at or near the base into few or many stems. In the Dagelet Island *F. multinervis* and the Chinese *F. longipetiolata* the trunk is usually single, but often divides near the base into several stems. The habit of the rare Formosan *F. Hayatae* is unknown, also that of the Caucasian *F. orientalis*, though from an account I have read of the latter it would appear to have many stems like the Japanese *F. Sieboldii* and the Chinese *F. Engleriana*. The American Beech (*F. grandifolia*) exhibits even greater diversity in habit. Normally it has a solitary trunk, but in pastures and places where the roots get near the surface and are consequently exposed and damaged, a multitude of suckers (sprouts) are developed which grow into trees and form a dense copse. Near the foot of the Hemlock Hill, by the collection of *Arborvitae* and Yews in the Arnold Arboretum, there is a splendid example of this type of growth of American Beech.

THE distribution of the various species of Beech is remarkable, and is a good illustration of the isolation of members of a genus to which I referred in the first article of this series. The Common Beech is indigenous in England and in western Europe generally, as far east as about the old Russian frontier from Norway and Sweden south to the Mediterranean; and it reappears in the Crimea. It is absent from Portugal and is not considered to be wild in Ireland or Scotland though it probably is in the southernmost parts of the latter country. Commonly it forms pure forests of considerable extent, some of the finest of which grow on the northern slopes of the Balkans

from their base to 4,000 feet altitude. The American Beech is distributed from Nova Scotia to the northern shores of Lake Huron and northern Wisconsin; south to western Florida; west to southeastern Missouri and Trinity River, Texas. It grows mixed with other trees and occasionally, with yellow Birch, makes nearly pure woods. Outside of America it has not proved amenable to cultivation and in Europe only a few small examples exist.

In Japan *Fagus Sieboldii* grows from the southern end of Hokkaido, through Hondo, the main island, Shikoku to Kirishima in the south of Kyushu, and in places forms pure woods, though usually it is merely the dominant tree in the mixed forests of certain zones on the mountains. The other Japanese Beech (*F. japonica*) is more rare and I have seen it only in the Nikko region, where it grows mixed with Siebold's Beech and other trees, at from 3,500 to 5,000 ft. altitude. On the tiny Dagelet Island, a lonely spot in the Japan Sea some fifty miles from the east coast of central Korea, grows an endemic Beech (*F. multinervis*) recently discovered. It is quite plentiful in forests of mixed broad-leaf trees on volcanic soil. I collected a number of small plants but the time was early in June and I failed to get them to America in a living condition.

NO BEECH grows in Korea, Manchuria, eastern Siberia nor in China until the central provinces are reached. But there, in Hupeh, Szechuan, Kuichau and Yunnan three species have been found; in fact in Yunnan, at about Lat. 23° N. the Beech finds its southern limit. In eastern Hupeh and ad-



FINEST WEEPING BEECH IN AMERICA AND REMINISCENT OF AN EARLY NURSERY

This magnificent tree, in its youth one of the specimens of the old Parsons Nursery which occupied this section, stands on what is now Washington Place, Flushing, Long Island—and is worthy a long pilgrimage to see

joining parts of Szechuan the three species grow together, though *F. longipetiolata* is the more common and occurs at the lowest altitude.

These three Beeches sorely puzzled me (though really they are as distinct as they possibly could be) and it was not until the eleventh and last year of my travels in China that I was able clearly to distinguish them. They were successfully transported to the Arnold Arboretum, and I am happy to say they are all growing there to-day. The Formosan Beech (*F. Hayatae*) is known only from a mountain in the heart of the savage country, where I was not allowed to visit. No Beech has been found on the vast Himalayan range, and this is rather curious since so many Chinese types find their western limits in Sikkim and Nepal. The tenth and last species known—*F. orientalis*—is found on the Caucasus, in Asia Minor and in north Persia, the Caucasus being its centre of distribution. Of these ten Beeches *Fagus multinervis* of Dagelet Island and *Fagus Hayatae*, the Formosan species, are the only ones not growing in the Arnold Arboretum.

The Common Beech is the only kind whose merit as a planted tree is properly known, and this is one of the very few European trees that thrives in eastern North America. It will grow on almost any soil except pure peat and heavy wet clay, but prefers dry soil and attains its greatest perfection on calcareous land or on deep sandy loam. On light sandy soil the bark often splits longitudinally and the trunks singularly resemble those of Hornbeam (*Carpinus*). At its best it is a magnificent tree a hundred and more feet tall with a trunk full twenty feet in girth. When grown close together the trunks are straight and free of branches for 30 to 50 feet from the ground or even more, but commonly the unbranched trunk is not more than 20 feet

high. On old trees, and especially on those that have been pollarded as in Epping forest or the famous Burnham Beeches, huge gnarled burrs develop on the trunk and arrest attention. It is a gregarious species and its branches are so numerous and dense that few plants will grow beneath its shade.

WHEN the Beech is planted to form pure groves the effect is perfect. It is an excellent avenue tree also provided it be planted thickly; but it is perhaps best of all as a screen tree. Owing to its dense branching habit it makes a splendid tall narrow hedge, an additional advantage being that it carries its leaves, whose russet brown gives a sense of warmth, through the winter. Properly clipped, Beech hedges last for centuries, are impenetrable to man and beast, and the finest of windbreaks.

In Europe, and especially in Belgium and England, Beech hedges are common. The most famous, however, is probably that of Meikleour in Perthshire, Scotland. It is claimed that this hedge was planted in 1745, and that the men who were planting it left their work to fight at the battle of Culloden, hiding their tools under the hedge—and never returned to claim them. It is 580 yards long and is composed of tall, straight stems set about eighteen inches apart on centres and now almost touching at their base. The average height is about 95 feet and it is branched from the ground up. This hedge is cut periodically, the work being done by men standing on a long ladder from which they are able to reach with shears to about 60 ft.

There is also a beech-hedge at Achnacarry, on the estate of Cameron of Lochiel, whose history is even more remarkable. Here in 1715 the trees were laid in slantingly preparatory to planting when the men were called away to take part in the

rebellion of that year. The trees were never touched subsequently and have grown up close together in the slanting position just as they were left.

Very many forms of the Common Beech are recognized—the Purple, Copper, Fern-leaf and Weeping being the best known. As a matter of fact the Beech is more prolific in varying forms than any other broad-leaf tree. And all the Beeches are lovely trees in their native haunts. Their wood is similar and makes excellent fuel but is not much esteemed otherwise. It is more used in France perhaps than in other countries, though in parts of Buckinghamshire, England, the manufacture of Beechwood furniture constitutes a local industry of some importance.

THERE are in England many fine Beech woods celebrated in song and story, the most famous perhaps being that known as the Burnham Beeches. This is situated some 25 miles west of London and a few miles from the royal borough of Windsor, and is a remnant of vast forest which once stretched right across England from the Thames to the Severn. It covers now about 226 acres. In 1879 it was purchased by the Corporation of London, and is a worthy memorial to the wise discretion and public spirit of the city fathers of the time. The age of these venerable Beeches is unknown. They are pollarded trees with huge, burred boles and far-spreading, umbrageous crowns. 'Neath their shade the poet Gray, author of the immortal "Elegy," was wont to sit and read his Virgil. Tradition has it that the pollarding was done by Cromwell's soldiers, but much more likely it was the overt act of some greedy lord of the manor at a more remote period, for purposes of temporary gain. But, by whomsoever the act was committed, the effect has been remarkable in presenting a spectacle which, taken as a whole, has no parallel elsewhere. In picturesque beauty the Burnham Beeches are unique and no tree lover should miss a pilgrimage when opportunity offers. It is nearly a quarter of a century since I paid my humble tribute to this shrine, but the memory of that glorious Saturday afternoon is vivid and undimmed notwithstanding that I have since seen the forest glories of half the world.

None of Britain's many famous specimen Beech trees are finer than those in Ashridge Park, Buckinghamshire, where stands the majestic Queen Beech, full 135 feet tall, with a trunk straight and branchless for about 80 feet. Except for certain Elms this is the tallest deciduous tree in Great Britain. Incidental mention has been made of the self-layered Beech at Newbattle Abbey. This tree is about 105 feet high and 21½ feet in girth of trunk at five feet from the ground, and has a total circumference of about 400 feet. In Windsor Park, the royal domain, are many magnificent Beech trees, one near the Ascot Gate being a venerable old pollard 30 ft. in girth which is said to be 800 years old. Of "inosculated" Beeches perhaps the finest is that at Castle Menzies, Perthshire, Scotland, which is 95 feet high. A little above the ground it is forked and then grown together again leaving an opening through which a youth might pass.

THE Purple Beech (var. *purpurea*) is in my opinion the only tree with colored leaves worth planting. One, possibly two—but not more—properly placed near the house or buildings, with plenty of open space around, will add effective dignity. Unfortunately, however, the use of this tree is all too frequently abused. The Purple Beech is a natural variety of the common kind and so far as is known all of them in cultivation have been derived from a single tree discovered in the 18th century (and still living) in the Hanleiter forest near Sondershausen in Thuringia, central Germany. Propagation has been effected chiefly by grafting. It is also carried on by seeds but only a percentage of the seedlings come purple. This tree grows to as great a size as the parent form, and there are specimens in England nearly 100 feet tall.

It is popularly supposed that the Thuringian tree is the only

wild Purple Beech known, but this is not true, neither is that tree the oldest of which records exist; but it is the mother tree of those cultivated in this country and elsewhere. Trees of the Purple Beech grow wild in the Tyrol, and at Buch, a village in the Canton Zurich, Switzerland, three specimens that grow among a mixture of the common green-leafed type with Oaks and other trees have been written about since 1680. At one time there were five of these trees and the tradition is that five brothers having murdered each other on this spot, five blood besprinkled Beech trees sprang up as righteous testimony from God and lasting witness to so horrible a deed. The armorial shield of the village bears a picture of a Purple Beech and the probability is that its name of Buch, which is the German for Beech, was derived from these trees.

The Copper Beech (var. *cuprea*) is a seedling form of the Purple kind, with leaves and shoots of a lighter color. It originated about a century ago, presumably in England where there are specimens full 90 feet tall and 15 feet in girth of trunk. In the sunshine and when the leaves are ruffled by a gentle breeze this tree is strikingly handsome. There is also a variety *purpurea-pendula*, a weeping form of slow growth, another (*atropurpurea*) with leaves darker than those of the typical Purple Beech, also a third (*tricolor*) with leaves dark purplish-green, spotted with bright pink and shaded with white.

The Fern-leaf Beech (var. *heterophylla*) has relatively small, variously cut green leaves and the twigs are often hairy. Its origin is unknown. At Newport, R. I., there are fine specimens of this distinctly beautiful tree. In England it is known to have been in cultivation for a century. There are forms of this Beech designated by such names as *asplenifolia*, *comptoniaefolia*, *incisa*, *laciniata*, and *salicifolia* which indicate the degrees of lacination obtaining. Also there is a form (*atropurpurea Rohanii*) with incised leaves of the same hue as those of the Copper Beech.

THE Oak-leaf Beech (var. *quercooides*) has long stalked leaves pointed at the base, with long-drawn-out apex and deeply incised margins with the individual segments pointed. Other forms with green leaves are the Crested-leaf Beech (var. *crispata* or *crispa*) a curious small tree with small, short-stalked leaves crowded into dense tufts which are scattered at intervals on the branches; var. *macrophylla*, with very large leaves; var. *rotundifolia*, with small round leaves; var. *grandidentata*, with conspicuously toothed leaves and several others.

The Weeping Beech (var. *pendula*) has the main branch very irregularly disposed and often the outline is rugged. Trees of this Beech may be tall and slender, or low and broad, or quite irregular according to the direction of the larger branches, which may grow outward or upward or in almost any direction; the smaller branches only are uniformly pendulous. The Weeping Beech is a natural variety and has been found wild in the forest of Brotonne, in Seine-Inferieure, France. Other forms of pendulous habit are var. *borneyensis* which was found wild in the forest of Borney, near Metz, and is said to have all the lateral and subsiding branches weeping; var. *pagnyensis* found in the forest of Pagny, Meurthe-et-Moselle, France; var. *remillyensis* from the forest of Remilly, near Metz; and var. *miltonensis* with only moderately pendulous branches, found wild in Milton Park Northamptonshire, England.

The Parasol Beech (var. *tortuosa*) is of French origin, having been found in the forest of Verzy, near Rheims and elsewhere. This form has a short twisted trunk and hemispherical crown, with all the branches directed downward and often touching the ground. It is seldom more than 10 ft. high and is more curious than beautiful. A similar form was discovered in Ireland some thirty-five years ago. The Fastigate Beech (var. *Dawyckii*) is a remarkable variety with all the branches erect. The original tree grows at Dawyck, Peebleshire, Scotland, on the estate of Mr. F. R. S. Balfour, Esquire.

Finally, there are variously variegated-leafed forms of no particular merit, and the Golden Beech so-called (var. *zlatia*)

discovered in Serbia and introduced to gardens about a quarter of a century ago. I have by no means mentioned all the known forms, however; but enough has been said to show the adaptable and precocious character of the common Beech. The fruit of the Beech is a stalked capsule clothed with simple pliant prickles. When ripe this opens at the apex into four divisions, and sheds the two nuts that each contains. The nut is sharply 3-angled, is rich in oil, and of pleasant flavor. In France, more especially in former times, the oil is expressed and used for culinary and illuminating purposes. The nuts are greedily eaten by wild pigeons and other birds, and by squirrels, deer, wild pigs, and other animals.

THE common Morel (*Morchella esculenta*), a mushroom-like fungus much used in culinary art for flavoring, grows in Beech woods. It is always found in the spring and in France and Germany the gathering of Morels is quite an industry among the

peasantry. But more esteemed by the gourmet is the Truffle (*Tuber cibarium*) which grows on the roots of the Beech. This Fungus is subterranean in habit and never appears above the ground. It is black, of irregular shape, about the size of a hen's egg, covered with warty excrescences and possesses a very strong but agreeable odor. It matures in the month of October and the flesh is brown, veined with white. It is generally found by pigs and dogs trained to search for it. Though it is by no means confined thereto, France supplies commercially the bulk of the Truffles of the world.

Finally it may not be amiss to mention the fact that the firm, close, smooth pale gray bark, "its glossy rind," seems to have proved from early times an irresistible attraction to love-sick swains, sentimental adolescents and other irresponsibles. Everywhere one sees lovely Beech trunks disfigured by letters and symbols cut into the bark, some many, many years ago. No other tree indeed, suffers to the same extent from this particular form of egotistical vandalism.



THE FAMOUS BURNHAM BEECHES

This remnant of a vast forest once extending across England and doubtless a thousand years old when William the Conqueror invaded the land, is now a three-hundred-acre public playground acquired during the present generation by the Corporation of the City of London

"Gardens may boast a tempting show
Of nectarines, grapes and peaches,
But daintiest truffles lurk below
The boughs of Burnham Beeches."

ROSES THAT CLIMB ARE ADAPTABLE

SHERMAN DUFFY

Conditions of Soil Mean Little to This Class, Wherefore
They Will Never Fail You If You Give Them a Fair Start

IF I were about to start a garden absolutely new and without a plant in it, I believe I'd start with a Rose! And it should be a Climbing Rose—Climbing American Beauty, I think, if I could lay hands upon one; for this seems to be the most durable, weather-proof, sure-to-bloom, big-blossoms-wafting-fragrance-all-about-its-locality of all—and with a purer and better color than the famous cabbage-on-a-stick from which it takes its name. There are to be sure some two hundred odd things in the way of diseases and insects that can happen to a Rose; and if some of these do not transpire, it sometimes will just “up and die” for no apparent reason!

Nevertheless, as I was saying, I'd start with a Rose—a Climbing Rose. And the reason I would choose a Climbing Rose is because these are sure to grow in any soil in which they are placed, while other classes of Rose are by no means so certain. I have broken out with the Rose fever time and again despite hostile soil, struggled along for a season or so with Hybrid Teas—which were seized with pernicious anaemia as soon as they landed in said soil—only to give up at last; and then after a bit be tempted beyond my strength, and start all over again! For I have always wanted to grow Roses, but never have been favored with friendly soil. Consequently I always had poor results, until a curious chance set me going in the right direction—that is, with Climbers.

The chance was a bargain in steel! I grabbed at a dairy-barn fire-sale all that another bargain fiend didn't of steel hay-carrier track and had it straightened and cut into lengths which made, when set in concrete, sixteen eight-foot posts and six ten-foot

posts. I placed two at each end of five long narrow flower beds running the length of my garden, the central bed having the ten-foot posts. The two extra ones of these served for an entrance arch at the side. And there was the making of Rose arches for which I had yearned many a year—in fact every time I had seen any—at a total cost of \$12! (I never expect to duplicate this bargain in steel, let me say right now.)

It was reproductions of photographs in *THE GARDEN MAGAZINE* that gave me the inspiration to switch from the Clematis bower idea with which I had bought the steel posts, to Climbing Roses—or at least turned my strong inclination to make one more try at Roses into a resolve. For I had one Crimson Rambler that had persistently hung on in a bone-dry situation under the eaves, and another old-fashioned Prairie Queen that flourished because nobody particularly cared whether it did or not apparently. So, with pillars for twenty-two Roses, I already had two!

I promptly annexed the other twenty—ten pairs of Climbing American Beauty, American Pillar, Aviateur Bleriot, Thousand Beauties, Hiawatha, Excelsa, Christine Wright, Dorothy Perkins, Dr. W. Van Fleet, and Silver Moon. I bought two-year-old plants—fine husky bushes cut back to about five feet—at sixty cents apiece. [Happy days!—ED.] Every one grew, and all gave a few blossoms the first season, so I had a chance to see what they were like. And American Beauty with its big, fragrant, rose-colored blooms, Dr. Van Fleet with delicate pink “regular” Roses, and the big semi-double creamy-white Silver Moon were my favorites of the lot at once.

These Roses have averaged twelve foot canes a season, and one of the Silver Moons reached eighteen feet. The least rampant of the lot is Thousand Beauties and Dorothy Perkins is the most ambitious. They did not make this luxuriant growth unaided, however, by any means. The soil was in general a light sandy terrain and none too good, though one end of the garden is of fairly good texture. The other end is extra dry and inclined to be clayey. I dug in a liberal supply of pulverized sheep manure when they were planted, and after the buds showed gave them liquid manure once a week until the last of August, when it seemed desirable to ripen the growth rather than to encourage any more. I alternated liquid hen manure with sheep manure and an occasional balanced commercial liquid fertilizer. They all responded nobly.

Their first winter was a test and I went to the trouble of laying down the canes and covering them. I have not done so since. There were some disappointments when spring rolled around. American Pillar was the worst. It made the sturdiest canes, as thick as a finger and looking vigorous enough to withstand almost anything, but they killed back almost to the ground. It still continues to be disappointing to some degree, although it retains enough wood to give a fine show of its great clusters of single, wild-rose-pink white-centred blooms. I have an idea that it has not properly ripened its wood, as it seems later in making canes than some of the others. In this trying climate of northern Illinois where even the ubiquitous Dorothy Perkins and the omnipresent Crimson Rambler kill back, Climbing American Beauty is the one Rose that always comes through in fine style and I certainly am strong for it. Aviateur Bleriot has the finest foliage of the lot—waxy, dark green, with clusters of medium sized buff buds that open to creamy little double Roses. It has a tea scent, and is inclined to be tender unless the wood is thoroughly ripened.



BY WAY OF EVIDENCE

It takes a little time, of course, really to clothe a frame with Climbing Roses, and the first year's growth is but an earnest of things to come

ROSES IN THE TEMPERAMENTAL ZONES

C. L. MELLER

Superintendent of Parks, Fargo, N. D.

Proving Themselves More Reliable Than Some of the Most Common Things They May Provide the Entire Planting of the Garden

WHERE the winter is long and weeks of zero weather are a certainty, where spring comes with a rush, where late frost nips the early buds and early frost the late ones, and where July and August are very apt to be hot and dry, as in the great Northwest, Roses are available nevertheless for almost every need of a well balanced planting design.

To begin with, there are the Wild Roses, ready at hand almost everywhere and willing and able to bloom almost anywhere, from the Wild Rose of the prairies, low and almost herbaceous with shoots seldom reaching a height of more than two feet from a spreading woody rhizome, to the taller woodland Roses which are just the shrubs for poor soil on which only the meanest weeds endure. I have grown these on a bank that is nothing more than a conglomerate of old Cedar blocks and manure with less than two feet of clay covering. Here, planted thickly, they fought and hid the weeds, and gave it a very tidy—and while in bloom, very joyous—appearance, as well. Warm and bright too in winter against the sparkling snow are the hedges of the Wild Rose while in spring some of the early migrants among the birds, hard pressed for food, are glad of them. Wild Roses can be transplanted at any season of the year providing the bushes are cut back about one half if they are in leaf. It is well also to take as much soil as possible with the roots, the one essential to success being that the roots do not dry out.

In the Austrian Briars, such as Harison's and Persian Yellow, we have foliage of a darker green with the vigor and hardiness of the Wild Rose. These likewise require no protection. The Moss Roses, too, are hardy and though their foliage is more or less subject to mildew, their exquisite buds seem to justify the use of a few bushes at least in every planting. They are the better for pruning and because of this they can be used for a low clipped hedge.

THE Rose par excellence for a hedge in a severe climate however is *Rosa rugosa*. How hardy it is surely every gardener knows and happily some of the newer double forms appear to equal the old-fashioned single type in this respect. Being of comparatively low growth it can be planted in front of the taller Rose bushes and further held down as low as desired by pruning. The old-fashioned Blush Rose, or Maiden's Blush to give it its proper title—the double pink form of *Rosa alba*—has distinct value as a shrub and is very satisfactory as well. The Cinnamon Rose also is available, and that "most spiny," as the botanists have dubbed it, the Scotch, *Rosa spinosissima*, should also be added to the list of shrubby Roses. The fragrant foliaged Sweetbriar may be included, too, if some killing back of the bushes be not considered too great a fault, for actually it is hardy at root.

These are for the background, or the framework so to speak of the Rose planting. But the planter even in a most hostile climate need not confine the scheme of his garden to these alone. For among the Hybrid Perpetuals there are a great many and as a start I would suggest Paul Neyron, Marshall P. Wilder, Anne de Diesbach, Gen. Jacqueminot, John Hopper, Magna Charta, Fisher Holmes, Mme. Gabrielle Luizet, Clio, Margaret Dickson, Frau Karl Druschki, and Marchioness of Londonderry. This list includes red, crimson, pink and white—and there is no reason, obviously why one should not add newcomers as they meet one's fancy. The American Beauty Rose even can be carried through our severest winter, though it is not ordinarily grown in the garden as it is much finer under glass.

OPINION still is current that the most a garden in colder regions can hope for is a few Hybrid Perpetuals; but the writer's experience with Gruss an Teplitz points to the Hybrid Tea as the Rose for climates where some of the "hardy" Lilies are *not* hardy; where "hardy" herbaceous perennials fail to reappear in spring; and where so rugged a shrub as *Spiraea Van Houttei* is killed back extensively in many a winter. The Hybrid Perpetuals are a little the hardier sure enough, yet to make them a safe investment they require winter protection; and as the Hybrid Teas ask no more, why give the former any preference? I find that two-year dormant field-grown stock set out in spring gives the best results.

As to Cultural Attentions

DURING the dry weather of summer, if there be small chance to water copiously, a constant stirring of the surface into a dust mulch will serve perfectly. For winter protection the bushes should be hilled up as one would hill up potatoes, covering the branches to a little higher than they are to be pruned back in the spring. This should be done just before the ground freezes in the fall; and it is well to bring the soil for making the hills from other parts of the garden and fill it on about each bush. The bushes may be brought indoors through the winter, if extraordinary precaution seems advisable, and laid down under about a foot of soil, or another way is to prune back in the fall to about a foot in height and cover completely with earth.

One may also have Climbing Roses in a severe climate in spite of the cold—not perhaps in that same profusion that milder climates are favored with, since they must be so grown that the canes can be laid down and covered in fall. The full length of each season's growth can be carried through each succeeding winter however underneath a foot of soil firmly packed over the canes. So do not hesitate to plant any climber that in vigor and hardihood approaches the Crimson Rambler, the Memorial Rose, or the Climbing American Beauty.



WILD ROSES MAKE AN IDEAL SHRUBBERY WHEN MASSED

Sure to grow in the climate to which they are native, here is a class that furnishes great delicacy of bloom in summer, and rich color of fruit and branch in winter



Motionless under the spell seemingly of some woodland god lies the lake reflecting the classic temple, the entire conception being rich in that static perfection which distinguishes Greek art

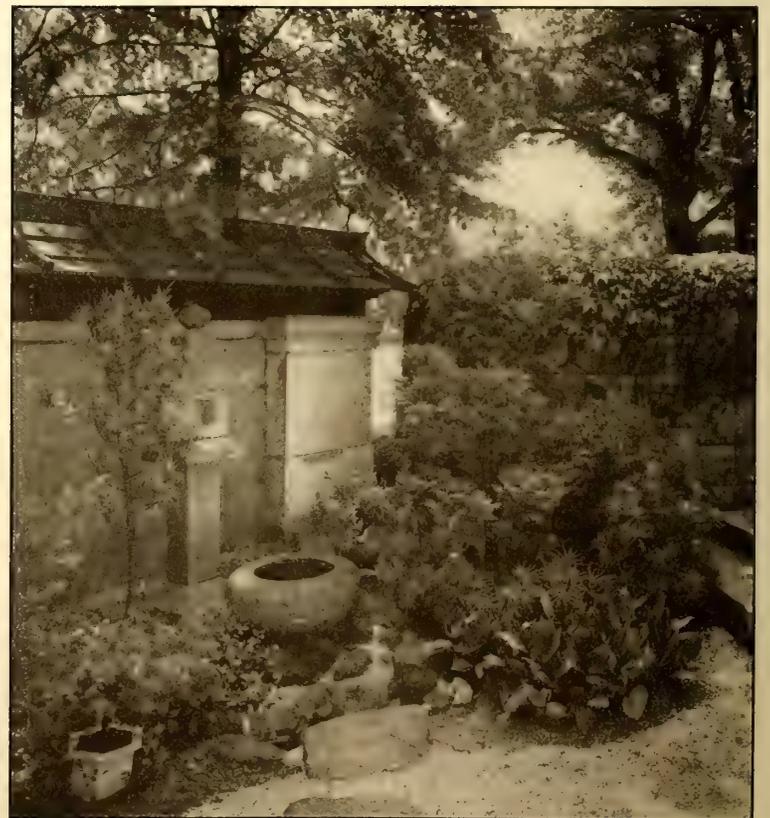
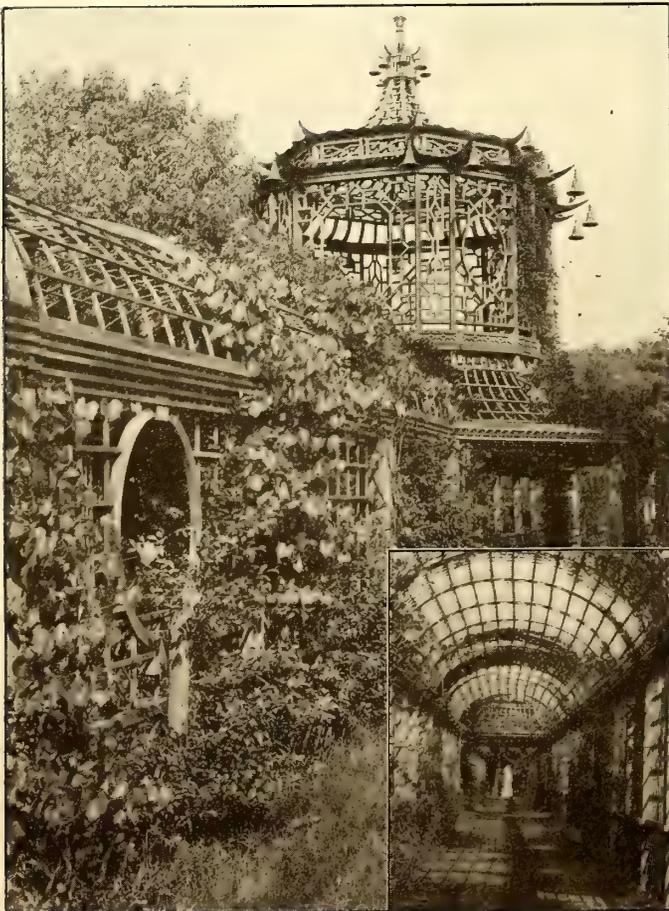


An engaging little crew are these

Some Views in the

Estate of Mr. Larz Anderson,

WHILE this garden, perhaps the finest and most famous in America, all things considered, is familiar to everyone in certain of its aspects, its great diversity is altogether unsuspected by the many owing to lack of reference thereto when it



Direct from the Chinese comes inspiration for the ornate delicacy of the lofty arbor at the left; while the little secluded corner above carries imagination to Japan and its miniature landscapes

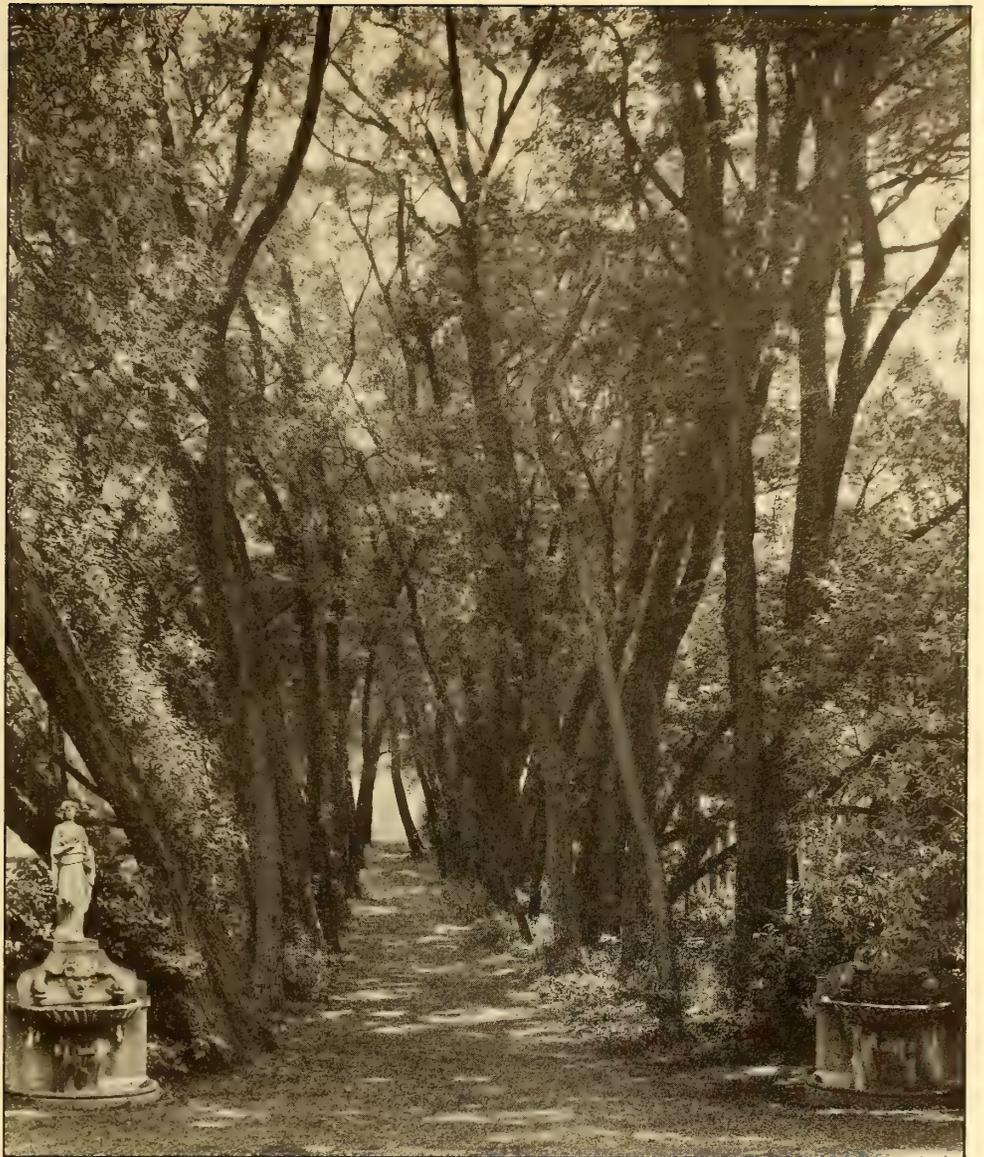


quaint Pixies of the woods of Weld

Garden of Weld

at Brookline, Massachusetts

has been the subject of illustration. To suggest something of its range of mood and inspiration the present assemblage of widely differing vistas and features is offered, not as an adequate presentation but rather as an interpretative hint.



An avenue of shade and receding tree trunks here suitably developed with Willows reminds one of the great Cypress avenue at Frascati and many another famous Italian bit

More in the conventional spirit of the formal garden as it applies to-day is the flower garden proper as the two views below reveal



TENDER ANNUALS FROM SEED

N. R. ALLEN

The Right Methods from Seed to Full Flower Demonstrated With Salvia, Which is One of the Extremely Popular Favorites

SALVIA seeds are of uncertain germination, and slow to sprout, so to facilitate matters I soak them over night in a pint bowl of water to which is added a tiny pinch of a soluble flower food. The next day remove them from the liquid and plant them in a seed-box at a depth of three or four times their thickness. Firm the dirt above them with a piece of old muslin, and water through this by means of a fine spray. The temperature in the furnace-room where mine go until germinated, standing across the top of a discarded clothes-horse, ranges during the daytime from eighty to ninety degrees Fahrenheit. The soil moisture is managed by watering through the cloth, and the latter must be always wet, though this means several visits thereto a day. About ten o'clock each night the final spraying is given, the cloth is wet, and the seeds are tucked up for the night under eight or ten thicknesses of newspaper.

When they have germinated they move to the kitchen whose temperature, though fluctuating, is not so high. The thermometer often registers eighty degrees when cooking is in progress but commonly it is about seventy. Here, uncovered, they have a place near the range for a week, then they are removed to a window facing south some twelve feet away. As soon as they crowd they are carefully pricked out with a penknife, and transplanted to stand two inches apart. After transplanting, water carefully and set where the sun will not shine on them for a few days.

Native to Brazil, Salvias not only like warmth, but a rich, friable soil. So the next event in their history is a small dose of wood ashes of the commercial sort, since these are not likely to be over-fiery. This tonic makes them strong and sturdy of stem, as it contains potash. I almost fear to mention it!—but if you try it, remember that you would not hand roast duck over to the baby just because he cried for it; and feed the Salvias with corresponding discretion. Not much more than a “dusting” of it is put on to the soil between the plants, in little furrows

so that it shall not be washed against their stems when they are watered. A week later some commercial sheep-manure is given in the same way, and this alternating potash and phosphoric acid—the latter for bloom and good color in the flowers—contained respectively in the wood-ashes and the sheep-fertilizer, is repeated several times, but always with caution.

The Salvias are the last seedlings to be taken out-of-doors. At first they go on to the back porch for a few hours during the warmest part of the day only, but not in direct sunshine. If there is a drying wind or a cold and blighting one, they are protected and if there is a warm spring rain, falling softly, they are allowed the benefit of it—but when the soil is sufficiently saturated they are brought under cover from it, and they are always brought into the house at night for the first week or so. Some direct sunshine is allowed after a week or ten days, and from the middle of May they stay outside all of the time. But their box is set within a frame so that if there is a downpour heavy enough to injure them, or danger of frost, they may be covered. On or about May 31st they are transplanted into their permanent place—a sandy soil, naturally very poor, which is enriched early in the spring with horse-manure, not then thoroughly rotted and having a good deal of straw. Here they get sun from about eleven o'clock on. When they are well established, some coarse bonemeal is dug in around them.

About August 1st they will commence to blossom—a little in advance of plants grown from cuttings, usually—and many of my plants are from forty to fifty-eight inches high. I find it better not to place them two successive years in the same place.

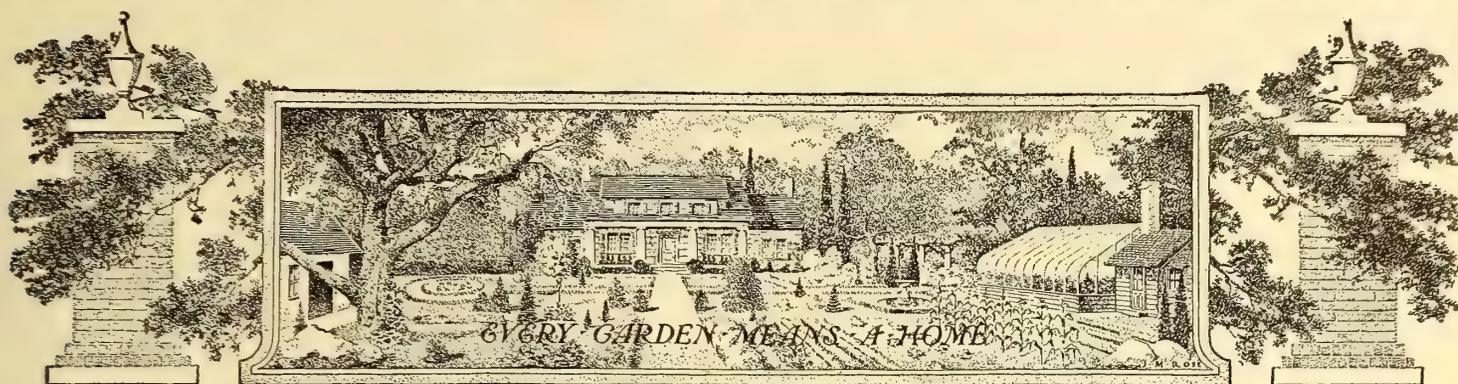
I would never advise an earlier beginning than the first of April. Too early a start doubles one's troubles, for plants become so large that transplanting multiplies and it will take several boxes to hold them. Moreover it is almost impossible to keep seedlings in the house for a long time and have them remain healthy and strong.



FOR BIG RESULTS IN LITTLE TIME

The half-hardy and tender annuals, with summer flower-roots are an ever ready means of overcoming bare space. Salvia, Coleus, Canna, Castor-bean and in the distance Elephant Ear

AMONG OUR GARDEN NEIGHBORS



OLD sayings have a way of startling us into new lines of thought that are sometimes very profitable; and the old sayings of the soil and plants are no exception. Here is one about pruning, for example, that makes us open our eyes, it is so revolutionary:—"the wise man pruning his orchard carries out the prunings thereof in his pocket." Imagine such a thing! When all the tradition and precept and practice of to-day is based on the theory of severe pruning to induce strong growth!

Yet looking at it from a purely common sense attitude, why should it? Why should taking away a portion of a plant make the rest of it stronger and better, any more than removing a portion of a man would have the same effect on him? Without doubt there is usually an exuberant growth in the season following heavy pruning (and in special cases of course, pruning is done for just the purpose of stimulating this new wood, for one reason or another) but it has been proven by careful observations that this growth of shoots is by no means an index of a plant's vigor as a whole. As a matter of fact, does it not obviously indicate that the portions of which the plant has been deprived by pruning were essential to its life, and must therefore be replaced at the earliest possible moment *before it can go on* along its line of normal development?

Further, inasmuch as its normal development has been thus violently interrupted, and its strength drawn upon to make up the loss of vital members, does not natural inference conclude that it never will arrive in all its parts at what it would have become if such interruption had not occurred? This is precisely the truth according to the conclusions which various experiments and observations, made here in both the East and the West, in Canada, in Europe, and in England, reach. The less a tree is pruned the larger and heavier it becomes at maturity—larger in all its parts and heavier by actual weight, which reveals of course more definitely than anything else can, its actual condition.

All of this is very significant, and the well-being of our shrubs and trees generally, as well as our fruit trees, deserves that the widest dissemination be given the information—since the meddling instinct to prune and snip has been so encouraged. Sometimes indeed it appears that the mass of gardeners believe a garden is principally a place in which to exercise the pruning saw and shears; and without a doubt on many places the labor wasted in pruning things that should have only dead branches removed, or not be pruned at all, would amount to 10 per cent. of the total.

Which is not to be interpreted as an arraignment of what may be called constructive pruning! For although pruning per se is never a necessity, but simply a measure to an end, constructive pruning is one of the fine arts of plant growing. It differs, though, from the ignorant and energetic use of the pruning instruments as greatly as the restrained work of modern surgery

differs from the indiscriminate activities of the old-time sawbones; and unless one knows beyond peradventure exactly what he is doing, why he is doing it, and just what effect it will have, let him withhold his hand! For it is a subject upon which even experts are not altogether agreed—albeit it is a practice as old as history—and much undoubtedly is yet to be learned about it.

For one thing, there is the sabbatical year stressed in the directions given the children of Israel, "Six years . . . thou shalt prune thy vineyard and gather in the fruit thereof; but in the seventh year shall be a sabbath of rest with the land, a sabbath for the Lord." Who in the modern era has ever tried following this literally? Yet why not? Apart from any religious significance, we know that the commandments and precepts given the children of Israel were based upon sound principles of hygiene or physiology; hence it would seem that there might be some advantage worth taking a good deal of pains to find out in this sabbatical restraint. But for the most of us the best part about the whole thing, under general normal conditions, is the extreme simplicity of *our* part—nothing to worry about, and nothing to do!

ONE wonders what would happen to a plant that came to our shores in these days showing evidence of actual disease or insect pest, when a luckless handful of seeds entering "by permit" obtained from the Federal Horticultural Board and routed through the channels mapped out by it, are delivered to their consignee as dead as doornails after treatment consisting of 24 hours' exposure to formaldehyde, followed by a similar exposure to hydrocyanic acid, the reason recorded on the slip in each case being *precautionary!* This is strenuous prophylaxis, hardly calculated to reassure plantsmen, or induce them to avail themselves of the much vaunted permits that "may be obtained." One wonders further on just what grounds the Federal Horticultural Board fears for the safety of our temperate region forests through the importation of the tender tropical Orchids! Or most of all perhaps, why, of things admitted, Lily-of-the-Valley, coming wholly from Germany, heads the list. Verily, there are not a few things in these days that are past understanding!

THE Trustees of the Massachusetts Horticultural Society are "of opinion that these drastic regulations of the Federal Horticultural Board, imposed under Quarantine 37, should be substantially modified. They believe that the restrictions enforced by this quarantine are very largely unnecessary and detrimental to horticultural progress in the United States."

They are of the opinion moreover that it is "a question whether the Secretary of Agriculture, in ordering such drastic quarantine, may not have exceeded both the intent and the scope of the Act of Congress authorizing plant quarantine."

Wherefore, "The Trustees of this Society believe that a

meeting of all the different horticultural interests in the United States should be held to consider Quarantine 37, and to take such action as may seem necessary to secure its amendment"; and they have requested that all organizations appoint a delegate to represent them officially at such a meeting, to be held during the month of May, in a central city of the United States. And further, "The Trustees of the Massachusetts Horticultural Society will thank you to advise them of what action you may take." This is good news indeed, and will lead to concerted action.

THE OPEN COLUMN

Readers' Interchange of Experience and Comment

Second Crop Crabapples

THREE Crabapples bearing in my garden were last summer full of aphid on the tips of the tallest branches. I had sprayed them before but evidently did not reach the vital spot. As I was busy I decided to cut out those tips and I did not want them to grow too tall anyway! Imagine my surprise when in August I found a number of branches in blossom on one of the trees, right where they were pruned, and I had a second crop of crabapples, about one dozen in all, in November, I presume as a result of the late pruning.—L. A. MALKIEL, N. Y.

Fall Blooming Iris Again

MR. MORRISON'S remark last spring that he did not know of another instance of the second bloom in the East of I. Mrs. Alan Gray as reported from my garden, recurred to me many times during the past cool wet sunless summer as I watched for a second bloom on my Iris plants. Sincere gardeners abhor, I think "fisherman" stories from their gardens. Not one spike of bloom appeared on any plant until mid-September when Mrs. Alan Gray with superb loyalty to the Garden Mistress, despite lack of ripening sun, sent up one spike—and such a spike! The usual number of flowers of this variety to the stalk is about five. This spike of vindication was twice branched and had eleven superb blossoms, whose pinkish lilac was well content with the Indian yellow of a neighboring Mrs. Aaron Ward Rose.—ELLA PORTER MCKINNEY, *New Jersey*.

Oh, Where Can It Be Had?

I WAS forcibly reminded by the experience of E. L. Cabot (see January issue) of the hours I too have spent searching the many catalogues for some of the plants and seeds commented on by writers in THE GARDEN MAGAZINE. And just here I would like to ask the "White Violet Lady" if she will please tell us where we can get plants of White Violet, for we are very much interested.—MRS. OLIVE GOENS, *Longview Farm, Hector, N. Y., R. 1.*
—I have been trying to locate some of the vegetables described by Mr. Kruhm in January issue, and have not yet traced Egg Harbor Pole Bean. When a contributor enthuses over a lot of so-called new things (new names, anyway!) why on earth don't you make him say where one can get them? That is one of the worst faults of THE GARDEN MAGAZINE and should be remedied. By the way Wong-Bok Chinese Cabbage, and the Cocozelle are already rather common here—I, at least, have raised them for some years.—(DR.) C. L. GREGORY, *Redwood City, Cal.*

—We sympathize with Dr. Gregory and others who have written in a similar vein but it is obviously not practical to supplement every article with a directory of dealers. As a matter of fact a little judicious searching of the list of the leading nurserymen and seedsmen will usually afford satisfaction. But it would indeed be surprising if any one dealer's list was found to offer everything that is discussed. Nor does the editor feel bound to hunt through catalogue after catalogue in assuring himself in advance that such and such a thing is offered in the lists before him, and refusing space to a comment on anything that he could not find listed. Such a course would not work for progress. Then again the dealer has ample opportunity to lay his announcements before the reader, and should do so indeed for the good of all. THE GARDEN MAGAZINE tries to lay before its readers the whole truth, impartially, in a general way—it is always glad to furnish further information by letter in reply to any specific request, so far as is possible.—Ed.

Tigridia Pavonia

A YEAR ago an English gardener gave me six bulbs of *Tigridia pavonia* which I planted last spring in a warm spot in my garden in a mixture of leaf mold, sand, and loam. Their growth was rapid and strong. Then came weeks of wet weather interspersed with only days of sunshine and then more rains. Undaunted by repeated soakings the *Tigridia* continued to grow and one morning I looked from my windows and saw standing straight and tall the most gorgeous flowers red, orange, and yellow in such splashes of barbaric combinations and truly "Tiger-like." They had persevered through such climatic odds to reach their ultimate development that they indeed won my admiration. The bulbs multiplied rapidly, so I hope to set out these children of the tropics this spring and wish them a pleasant summer heat and sunshine. The gardener, who gave me this plant told me they were supposed to possess some medicinal qualities, but of what value, he knew not. What of the plant? Can any one tell me?—(MRS.) HENRY A. STEINMEYER, *New York.*
—*Tigridias* are Iridaceous plants, and the one mentioned is called Peacock Tiger Iris from its gorgeous coloring. It was introduced from Mexico in 1796. It should be treated just like a *Gladiolus*. All these Tiger Day-lilies are barbarically gorgeous but the flowers last only one day which is somewhat of a drawback.—Ed.

By Way of Explanation

AN ARTICLE in a recent number in referring to Californian enterprise in the future production of plants for American gardens gives a wrong impression of the Cottage Gardens Nurseries moving to the Columbia River Valley. We are not moving because we cannot grow bulbs, Azaleas, Rhododendrons and other plants in enormous quantities successfully and profitably, but for business considerations. We had our troubles and our auto trucks were attached and tied up at commencement of shipping season so as to prevent our getting the 25 to 30 carloads of bulbs and plants shipped on time. Our water supply was cut off also when Azaleas were budding. Now as to growing plants: It takes three years to produce a commercial *Azalea indica* plant 16 to 18 inches in diameter. Four years produces commercial Rhododendrons; one year produces large fully-budded *Ericas* two to three feet tall; six months produces good *Begonia* bulbs from seed and same is true of *Gloxinias*; two years produces mother bulbs in Tulips from small planting bulbs three-quarters of an inch in diameter, and the same is true of *Narcissus*. *Araucarias* are readily produced in twelve to eighteen months. Hollies grow slowly and four to five years are required to get good plants two to three and one-half feet high. Six months produces fine *Hydrangeas* and other succulent rapid-growing plants. Our growing season includes all months except July, August, September, and October. No, it is no fault of the growing here. This coast will grow all the Dutch bulbs, Azaleas, Rhododendrons, Camellias and plants which will be needed to supply the American market and furnish them at less cost than imported stock. Stop kicking at the quarantine! CHARLES WILLIS WARD, *Eureka, Cal.*

—We take exception to Quarantine No. 37 partly because it is using quarantine measures to achieve a protective wall, and partly because it is administered in an illogical arbitrary way without regard to the actual facts and necessities of horticulture.—Ed.

An Early Start Without Hotbeds

VERY early hotbeds do not seem satisfactory in our climate (Wisconsin) for the germination of seeds that require a good deal of heat,—such as Tomatoes, Egg-plants and Peppers, and some flowers. I plant such seeds in cigar boxes about two and one-half inches in depth, and place the boxes in a pile on a hot-air register in a room where the heat is never intense, and where the boxes will not be troublesome. They are piled unevenly to allow a circulation of air, and are watered twice a day. The top box is covered with glass. Germination is quick and certain, and as soon as the plants appear the boxes are removed to a plant stand in a sunny window. Here they remain until the hotbeds are ready. We have found a very satisfactory place for the germination of seeds in our cellar. The top of our hot-air furnace is covered with a layer of sand to prevent escape of heat. Boxes placed on this sand between the emerging pipes keep an even, gentle heat, and give a surprisingly high percentage of germination. These boxes are covered with glass. We use the furnace again in making "pots" from which to transplant into the garden, using tin cans which are heated to remove the end. These cans are arranged in shallow boxes, drainage being provided for through the bottom of the box. These cans have uniformly produced

better plants for me than my paper pots, and last three or four seasons. Our Tomato plants are usually pretty tall when we set them out, because we do not put them into the garden before the end of May. Instead of digging a very deep hole to dispose of the contents of the "pot" and surplus stem, we dig a long one, and lay the root and several inches of stem on its side in the hole, turning the leafy portion upright when we fill in. This gives opportunity for the development of a splendid root system in the best soil, and the results are fairly magical. Last year I picked ripe tomatoes on July 11th. I have experimented a good deal with garden tools because so many of them seem quite unsuitable for feminine use. I have found a Warren hoe, and a smaller triangular hoe with a blade 4 x 4 x 5½ inches, both much easier for a woman to use than the ordinary hoes. It may not be out of place to add that in my humorously inclined family THE GARDEN MAGAZINE is known as "mother's Bible."—HARRIET L. KUTCHIN, *Green Lake, Wisconsin.*

Snowballs and Aphis

AS TO the old-fashioned Snowball going out of culture because attacked by blue aphid (page 111, October, 1919) I find that the circumstance is often a reminder that we do not do as well by it as we should. I have an old plant that has stood in shade and been much neglected a long time and I find that it is often attacked by the aphid and fairly crippled. Sometimes I have been on the point of pulling it up and throwing it away. One year I found a small plant that had rooted from the old one—as they will do readily if the ends of branches are covered, much as the Forsythia does—and I took it up and set it in rich soil in full sun. The result was that it began to blossom when not more than a foot high and it gets many compliments for its beauty of leafage when out of blossom. I think we can raise it and the Japanese Snowball, too, if we give it proper care.—JOHN W. CHAMBERLIN, *Buffalo, N. Y.*

The Little Iris Arenaria

THIS wee immigrant from Transylvania (referred to by others in recent notes) found a place in my garden several years ago. It has shown approval and appreciation of its new home by spreading growth and gleeful yellow bloom in early May. To the lover of the tiny fairy-like representatives of any genus, it will appeal because of its excellent, if sometimes whimsical, qualities. It likes the hottest, driest, sunniest plain of the rock garden, demanding the whole of its diminutive domain and resenting sulkily any intrusion of overhanging plants. Within the week or ten days of its blooming period it makes amazing bursts of color. It seeds so abundantly that often the pods have to be removed in numbers for fear of exhaustion to the plant. When sown as soon as possible after ripening, the seeds germinate fairly well the following spring. A single seedling sheaf transplanted in August will by the next August have spread, in some cases, to the astounding number of thirty—a somewhat rambling tuft of slender foliage, rarely exceeding five or six inches. The shallow anchorage of the roots requires the protection of a mulch. Manure should not be used. A simple shading of the spot with pine boughs or a few cornstalks is the most satisfactory winter and early spring care. The bloom is somewhat fugacious, lasting in very hot sunny weather even less than a day.—ELLA PORTER MCKINNEY, *New Jersey.*

Banana Melons

I READ with interest what R. E. Allen had to say of his experiences with the Banana Muskmelon on page 300 of the February GARDEN MAGAZINE. But I take exception to the comment and here are my reasons for so doing: about 25 years ago I visited a friend at Calla, Ohio, in August. My friend went to his garden and brought back a large basket of various Muskmelons among which were several ranging from 12 to 15 inches long. I commented on this variety and he told me they were the "Banana" melon. They were very fine eating, as Mr. Allen has said. For several years I have been trying to grow Muskmelons and found that the hungry bugs got most of them until I got some of the Banana seeds and grew them. For two years I have grown these and the bugs have not yet discovered that they are Melons—much to my satisfaction. Some years ago I visited Southern California in early fall and got acquainted with the wonderful Casaba Melon. A little later the Honey Dew was introduced and now it is extensively sold in the city markets (Cleveland). But it is entirely different from Banana, which is a real Muskmelon while Honey Dew has light green smooth skin and a different texture of flesh, and with no furrows or ribs. I endorse all that Mr. Allen says for Banana Muskmelon. Honey Dew is mighty good too—yes, better

than lots of Muskmelons and well worth a trial by any one having a long summer season.—F. A. GANONG, *Ohio.*

—May I draw your attention to the foot note to the "Better than Bananas" paragraph on page 300 of the February issue? Mr. R. E. Allen's description of the Melon precludes all possibility of its being Honey Dew; it is the true Banana Muskmelon which our firm (Burpee & Co.) has been offering for many years. The shape of Banana Muskmelon has been against the variety from the commercial growers' viewpoint, but on account of its cropping qualities and fine flavor it has become quite a favorite in many home gardens.—GEO. W. KERR, *Penna.*

A Revised Opinion and Some Peas

DOES your conscience ever trouble you? Mine does! I wrote recently that THE GARDEN MAGAZINE was not quite everything it ought to be, but after looking over back numbers, and comparing them with the recent issues, I apologize. The magazine is certainly *great* and growing *better*. I have grown garden peas very liberally for home use for years, some seasons for market and as I believe, the first Gradus ever sold in Binghamton. I found that Gradus does its best by being sowed very early, as early in fact as the smooth peas can be planted, also that the seed should be sowed much more freely than usually recommended. I have sowed peas when large chunks of frost or frozen earth were near the seed, resulting in splendid germination, sometimes quite a fall of snow and unseasonable low temperature occurring after planting with no bad results. Gradus never shows its best when caught by warm weather. I think Laxtonian and other wrinkled peas would stand the same treatment. The only trouble I ever had was from severe freezing after peas were above ground which turned the vines yellow, they never making a complete recovery. My soil by the way is a rather heavy loam, too heavy to get sweet corn real soon.—LA FOREST F. BROWN, *Binghamton, N. Y.*

—It is indeed surprising to learn of such results in view of the extraordinarily early planting of wrinkled peas. The garden must be unusually well drained, and it must warm up quickly, which is exceptional on a clay soil. Since Mr. Brown likes Gradus, why not also try Thomas Laxton of the same habit of growth with pods uniformly well filled, and the peas of even superior flavor. Of the strictly dwarf peas give Buttercup and Potlach a trial. These are mid-season dwarfs; Buttercup is of unrivalled quality, though not suitable for market because of its light color; Potlach on the other hand, perfects a pod like Thomas Laxton, and is a wonderful market pea maturing in eighty-five days on the clay soils of Western Pennsylvania.—A. K.

The Horsechestnut Here and Abroad

WHEN I read the fine description of the Horsechestnut (in February GARDEN MAGAZINE) I wondered why Mr. Wilson did not mention the noble double row of trees on the long waterfront at Lucerne, Switzerland, for I am sure that he must know of it. They shade the promenade in a most acceptable way. I recall sitting under the monster one on the terrace above picturesque Altdorf; and we found striking specimens in St. John's College park at Oxford. I have never seen quite as fine Horsechestnut trees in this country as in Europe, though that may be on account of our considering them too common and neglecting them. Buffalo, N. Y., has had such a sad experience with the Horsechestnut that I have said I would never plant one, or even let it come up as a weed from the nut, as it is inclined to, just as the Ailanthus will do as soon as it is once established. The tussock moth somehow marked the tree for its own a number of years ago and proceeded to devour its foliage entire, so that it stood from early July as nude as in winter, unless it had energy enough to leaf out again. As the insect has but one brood here the later leaves were not attacked. This circumstance has made the tree a nuisance here, though through no fault of its own. Finally the city had to set up a forestry department, chiefly to fight the worm and is making good headway against it, though if not persistently sprayed it will return year after year. Oddly enough the trees in surrounding towns are not molested. The worm will eat no other foliage generally except that of the Basswood, so I have thought that the only way of getting rid of it would be to cut down these trees and starve it out. In dry weather the Horsechestnut suffers and its leaves often become very ragged in appearance and sometimes fall prematurely, so that it is really not much of a success as a city shade tree here. We Easterners are sorry that the Sugar Maple does not succeed here, as it does in central and eastern New York, but there are varieties of it that flourish. Our shade trees are the Elm (not quite as good as in New England), Oak, in several species, Soft Maple, Sycamore and many others in

smaller number. I am inclined to think that either the Ailanthus or the Catalpa would serve us better than the Horsechestnut, at least till the worm is driven out. Some of our trees grow in a remarkable way. A Soft Maple in a few feet from my window, standing between the sidewalk and the asphalt pavement, is perfectly vigorous.—JOHN W. CHAMBERLIN, *Buffalo, N. Y.*

Quality in Corn

MR. KRUHM'S article in the January GARDEN MAGAZINE very much interests me, as it also must interest all who read it. I am one of the pioneers of the seed trade; have been actively engaged for 60 years and have a modest garden on Cape

Cod where I annually experiment with various sorts of fruit and vegetables. I tried several sorts of the larger type of golden Corn last season and I quite agree that none of them had table quality equal to Golden Bantam. I very much wish to try Golden Evergreen after reading what has been said. For several years past I have made a careful study of Tomatoes, and found Bonny Best to be the most desirable. Our soil on the Cape is rather light, but this Tomato flourishes there. As is said, it is also my experience that it is less acid, than other good varieties and I am safe in eating all I want of it which I could not comfortably do with some other sorts. I also discarded Old Homestead Bean for the lack of quality mentioned in this note referred to, and will try Egg Harbor Pole.—JOHN FOTTLER.

The Month's Reminder

"Come with me, then, behind the scenes, where we are concerned only with the joys of plant increase and rejuvenation"

The Reminder is to "suggest" what may be done during the next few weeks. Details of how to do each item are given in the current or the back issues of THE GARDEN MAGAZINE—it is manifestly impossible to give all the details of all the work in any one issue of a magazine. References to back numbers may be looked up in the index to each completed volume (sent gratis on request), and the Service Department will also be glad to cite references to any special topic if asked by mail.

When referring to the time for out-door work of any sort New York City at sea level in a normal season is taken as standard; but at best dates can only be approximate. Roughly, the season advances northward fifteen miles a day. Thus Albany, which is one hundred and fifty miles from New York, would be about ten days later, and Philadelphia, which is ninety miles southwest, about a week earlier. Also allow four days for each degree of latitude, for each five degrees of longitude, and for each four hundred feet of altitude.

APRIL—THE MONTH OF RAPID-FIRE ACTION

NEVER let vigilance relax with regard to a sudden cold snap, for frost is likely to occur after even a warm and balmy day, right up to the end of the month. If you have delayed ordering seeds as late as this do not accept whatever a corner grocery stock may offer as substitute. Cheap seeds or seeds from any source other than a standard seed house are the most expensive things in the world (although they may represent but a small outlay in money) for they mean a year's production lost, all of the time put into gardening thrown away, all of the energy employed wasted, and like as not your gardening morale completely routed. Avoid them like a plague!

General

Pull or cut weeds out of the lawn whenever you see them, in passing. Fill the holes thus made with soil, sift on grass seed, and tramp it down.
Mow the lawn as soon as its growth will be reached by the blades of the machine, and mow frequently but never cut extremely close. This will induce strong root growth of the grass and that density which alone makes a perfect surface.
Finish manuring and spading up borders in readiness for Pansies and material of this sort which may be going in.

Greenhouse and Frames

Everything requires more water and ventilation and all material that is to go out of the greenhouse, whether out of doors or into the dwelling, must gradually be hardened for the change.
Shift well rooted plants into larger pots as fast as they need it, and repot Hydrangeas and such material if conditions demand, this month.
Plant Carnations in the field the end of the month, for carrying over until next fall.
Plant out all clumps of perennials that have been forced, giving them an obscure place where they may pick up for two seasons at least.
Plant out spent bulbs where these may also have time to recuperate.
Pot all seedlings as fast as they are ready and keep growing without a setback.
Prune weak wood out of fruits and start late trees into growth now.
Melons, Cucumbers and Tomatoes for under-glass summer crops should be started now. Use any preferred Tomato, but choose English forcing Melons and Cucumbers.

Flower Garden

Start tender annuals in coldframes.
Sow Sweet Peas at the earliest possible moment, as they cannot stand hot weather. Set out those that were started indoors.

Set out Dahlias as soon as the ground is drained out.
Uncover Roses and look carefully for scale. Prune them, leaving three eyes of last years' wood on Hybrids but taking out only weak wood and reducing the rest one-third on the Teas.
Do all planting this month. Shift perennials that you are to transplant as early as possible.
Look over all shrubs and trees and make sure there is no scale, or spray for it if there is. Often a single branch will be covered when the rest of the shrub has as yet escaped.
Prune shrubs that flower on this season's growth, now; prune all other and early flowering shrubs after they have bloomed.
Remove protective material from Rhododendrons, etc., on a dark day.
Fill gaps in hedges now, if winter has killed plants or branches here and there.
Trees newly planted that sway badly in the wind should be staked until they take hold, and also until they develop enough trunk to resist for themselves.
Rake up among perennials as soon as the foliage can be distinguished. Water all newly set out material often if the ground seems dry and there is much wind, for the latter robs the soil rapidly.

Vegetable Garden

Asparagus, Rhubarb and Spinach (fall-sown) should be uncovered and the top-soil of the beds stirred.
According to the character of the season and the development of the leaves on native material, plant the seeds, beginning with the hardiest vegetables and progressing as the season progresses.
First plantings will be Radishes, Beets, Parsnips, Onions, Spinach, Peas, Lettuce, Cabbage, Salsify, Carrots, Turnips, and Kohlrabi.

Fruits

Finish all grafting within a week after the buds of the fruit trees swell.
Plant strawberries at once for starting new beds. Rake mulch from established beds or open it above the rows of plants to let them come through.
Examine Peaches to six inches below the surface of the soil for borers. Gum or sawdust reveal them. Clean these away, open the holes with a sharp knife enough to admit a flexible wire and run this in as far as it will go to kill the grubs. Examine again in about a week for later developed attacks.
Watch Currants and Gooseberries as the new leaves unfold, especially near the ground, for the worms, and spray at once they appear, wetting the under side of the leaves.
Watch for tiny steel-blue beetles on Grapes as their leaves open. Pick them off or knock into a pan of kerosene.

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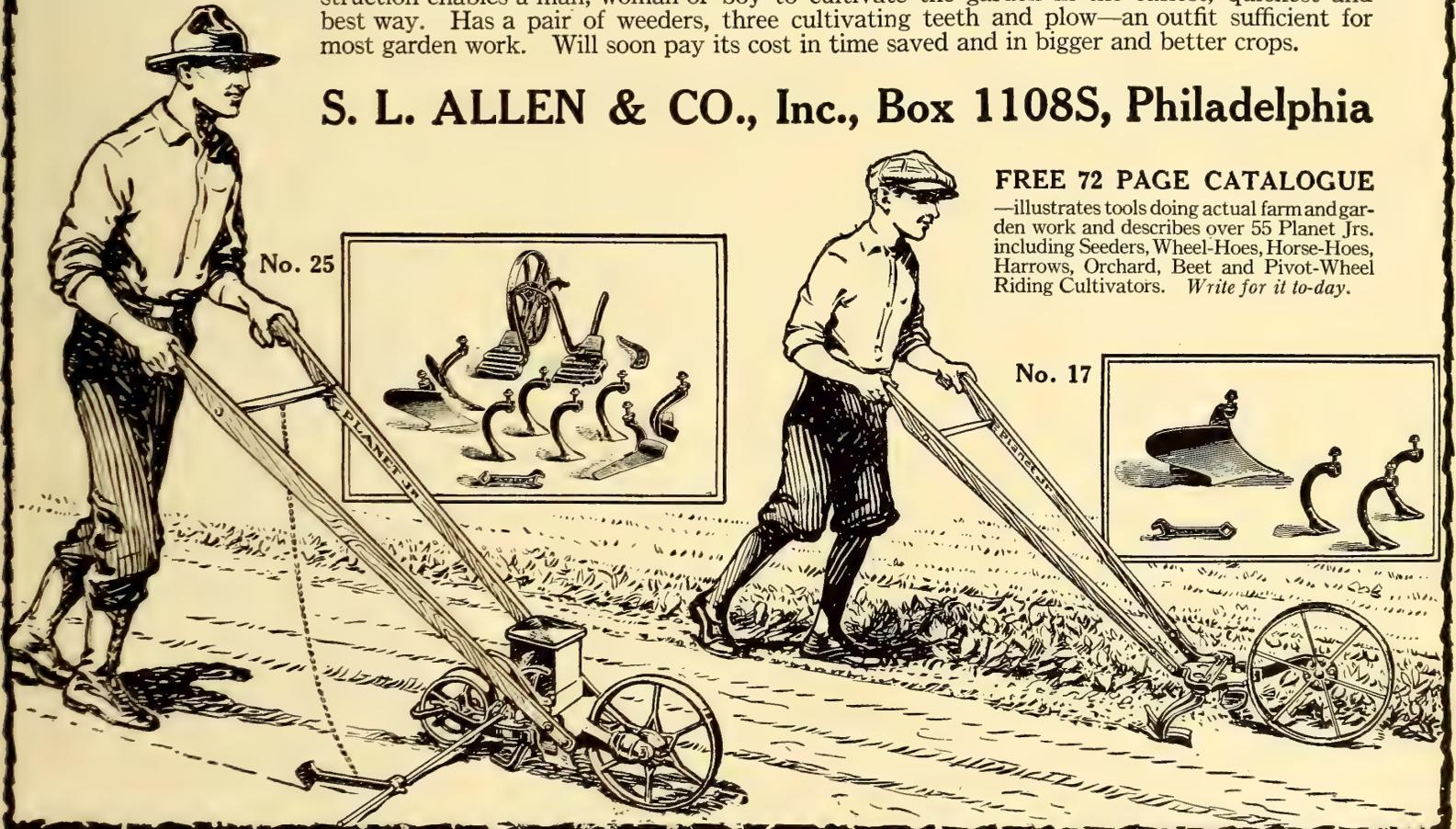
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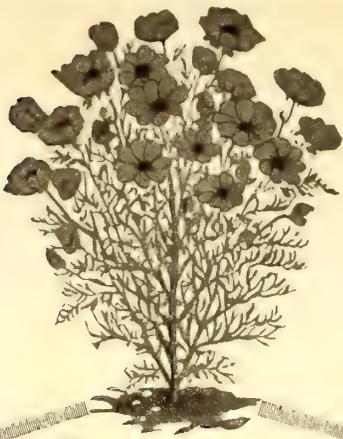
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BLACKBERRIES FOR WHERE YOU LIVE

E. I. FARRINGTON

AS A rule the blackberry is not very exacting as to its soil requirements, but nearly all kinds like plenty of moisture. There is a great difference, though, among the blackberry varieties as to hardiness, so that some of the best cannot be grown safely in the Northern states; and a great many blackberries that are grown commercially are not the best for the home garden. In Kansas, Missouri, and states in that section the three best varieties for home growing are Early Harvest, Mersereau, and Eldorado. The Early Harvest is especially likely to be found on the farms, and it has the advantage of being exceedingly early, often ripe indeed by the Fourth of July or earlier. The fruit is medium sized, oblong and juicy, and wherever it flourishes it is a valuable sort. Unfortunately it cannot be grown in the Northern states except in especially favorable locations.

The variety called Mersereau is more widely grown, being somewhat hardier. It cannot be planted with perfect safety in New York state, however, although it is found in a good many gardens. It is a seedling of Snyder, larger and much more drought-resistant and a good berry to grow in connection with Early Harvest, being a midseason variety. Of late years it seems to bear as freely as any other kind, and it is singularly free from orange rust. In some of the central states a variety called Minnewaski is popular, and with good reason for it is a remarkably good berry, extra large, aromatic and juicy. It is one of the best home berries in sections where the weather does not get extremely cold.

The list of blackberries hardy in the northern sections is fairly long, but different varieties seem to give the best results in certain districts. In Wisconsin, Eldorado, Snyder, and Ancient Briton are the varieties most commonly grown. Here as elsewhere Snyder must be set down as least desirable for the home garden, except in especially favorable situations—as where a rainfall is invariably plentiful. Ancient Briton is an old time variety which seems to grow well over a large area, and according to one expert in New York state should be included in any selection of the three best berries desirable for the home garden.

Although Eldorado is of the Snyder type and just as hardy, it is far and away a better variety the berries being of medium size, jet black, and well shaped. Their popularity however lies chiefly in their melting sweetness. It is medium early, hardy and not particular as to soil, thriving in New England as well as in Michigan; it can be set down therefore as an all-round good berry, and one of the most reliable which can be chosen. In Michigan it is one of the most important varieties.

Another is Wilson's Early; this is not very well known but grown to some extent in New York state also. The berries of this are large, round and glossy. Growers in the neighboring states, especially in Minnesota, have a fondness for Kittatinny. This is an old variety, of course, but hardly surpassed by later introductions. It is slightly tart and when perfectly ripe the flavor is unsurpassed, the canes grow strong and erect, and sometimes a small second crop is produced in the fall. It is a late berry and for that reason a good one to plant in connection with earlier sorts like Agawam—or, farther south, Early Harvest.

In some places it seems to be perfectly hardy

yet in New York state it is occasionally winter killed. The late E. P. Powell of Clinton, however, named it as one of his good varieties, although he put Ancient Briton and Eldorado ahead of it. The varieties recommended for New York state are Agawam, Ancient Briton, Eldorado, and Kittatinny. In New Jersey all these varieties and some others are grown successfully. A particularly popular variety right now is called Ward, a descendant of Kittatinny, and considered an improvement. It makes a strong growth and yields heavily.

Garden makers in New England have to choose with considerable care as the rigorous climate of that section is much too severe for many varieties. Eldorado seems to be among the best kinds, but Agawam is grown to a considerable extent and is probably the most popular early variety for the coldest sections of the country. This is good, fairly early, very productive, and bearing for a longer season than many. It is a berry that succeeds much better in heavy than in sandy soil, and when soil is very light, some other variety should be substituted.

One variety more often found in New England than anywhere else except in New Jersey is the Wachusett Thornless. Home garden makers with a limited area prefer this variety because it is practically thornless, and so can be worked without the necessity of putting on gloves. There is no doubt about its hardiness, but it is quite often attacked by the orange rust, and does not produce so freely as some other kinds. The berries are excellent, though, being sweet and juicy.

Although some of the best varieties are of necessity ruled out when one starts to choose blackberries for Canada, many of the kinds named can be grown in the Dominion. In the Niagara Falls district Agawam, Snyder, and in the southern sections, Kittatinny are usually hardy. Eldorado and Kittatinny, and even Mersereau can be grown on the Essex peninsula, but in the Lake Huron district Agawam and Eldorado should be depended upon.

Closely allied to the blackberries and differing from them only in their running habit are the dewberries, which are usually allowed to trail on the ground, although sometimes trained to supports. Because of their low growing form they are less likely to winter kill than ordinary blackberry plants. Moreover, they are earlier than any other blackberry. Only a few varieties are listed, and of these Lucretia is much the best known. It is very early, glossy black, large, coreless, and sweet. This is the variety grown in most parts of the country, although the Austin has been recommended as preferable by some experts, especially for Long Island. In Missouri a berry called McDonald is being put out, which seems to be either a dewberry or a cross. It needs the Lucretia dewberry planted near as a pollinizer in order to obtain perfect berries. Its vines trail along the ground the first season, but send up canes later on.

It seems a pity that the culture of the blackberry has been so largely neglected. Probably it would be more widely grown if amateurs were more familiar with the kinds best adapted to their sections. One thing is certain. No such blackberries can be obtained in the market as can be grown at home, because blackberries are never at their best unless they are allowed to become perfectly ripe on the vines, being picked just as they are ready to drop.



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All of these members of the family have one great virtue—they respond most amiably to shearing, so their height can be regulated to suit your fancy and your ulterior object—whether it be a foundation planting, an evergreen bed, a hedge, an entrance group, a window box, or an individual specimen of proud mien. The cost is as low as \$3. for a 2 ft. Golden up to \$30. for a 10 ft. Obtusa, and so on. Price list on request,—and suggestions to suit your own grounds if you will kindly give a brief description of your lawn.

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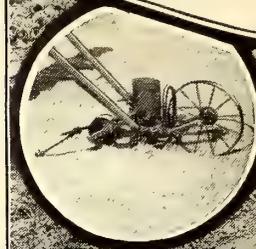
It plants the most difficult seed such as tomatoes, beets, lettuce, etc., to the very last thimbleful. It sows any quantity wanted in drills. It puts any desired number of seeds in hills 4, 6, 8, 12 or 24 inches apart. It makes furrow, plants seed, covers it, packs soil and marks next row at one operation.

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While other publications have been advancing their subscription price, we have held ours steadily. \$1.00 for one year, \$2.00 for three years.

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MADISON COOPER, Publisher, Calcium, N. Y.

GLASS GARDENS



And So, After That They Had a Perpetual Garden of Roses

After all, it is the little things that do the really big things for us. Sometimes it's just *one* little thing. Leastwise, that is the way it was with this particular instance, that we have a notion you would like particularly to know about. Of course, it would be a deal more definite if we could tell you names and the place. Something the owners said, however, held a suggestion that it would be happier for them, if we didn't. So, let's call them the Put-Offs.

All of which brings us to the happening itself. The one little happening that made it happen to the Put-Offs. Like a lot of us, they had long talked of having a Glass Garden; even to sending for a catalogue, with a request for a price; which, in itself, did not at all deter them. Nothing really seemed to prevent them buying one; still they just didn't. Then one day when Mrs. Put-Off was spending a week-end with her old schoolmate, a little dinner was planned. It fell to her lot to go down to the greenhouse and pick some roses for the table.

Mind you, it was the middle of winter, snowy and blowy; although the picture of the house itself, shown here, was taken last September.

With each rose she picked, there came a distinctly new pleasure. A care-free joyousness.

When with armsful of the queenly flowers, she walked out into the greenhouse work room, her mind was all made up. She knew that nothing could repeat and keep repeating that joy for her, but a Glass Garden all their own.

And so—so little a thing as picking a bunch of roses, has brought about so big a thing as a perpetual garden of roses. A garden of roses and other flowers for the Did-Its—for you will agree, their first name straightway ceased to fit.

As building just such perpetual Gardens of Glass is our business, you cannot exactly blame us for hoping that the telling of this happy happening will be just the little thing that will make a similar one happen to you.

Which shall it be—a catalogue—or talk it over together?



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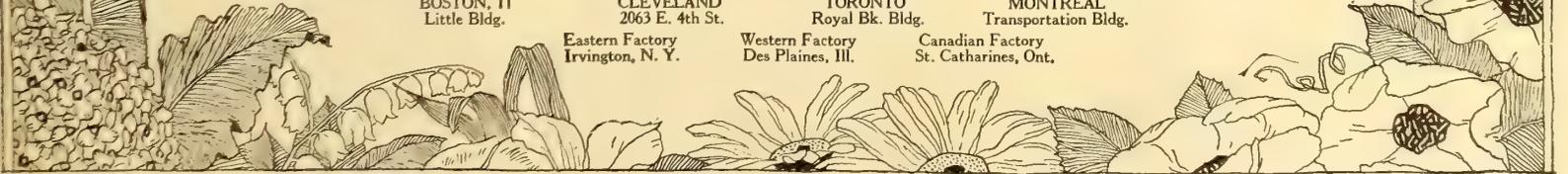
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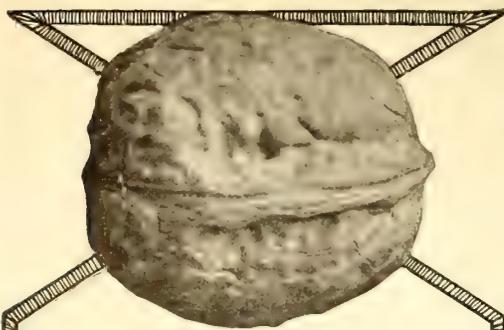
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THAT is just what the nut-grower does—particularly the grower who has a few trees around his home grounds. But be sure to set grafted or budded trees—**Jones' trees**—which practically guarantee large nuts and fine crops.

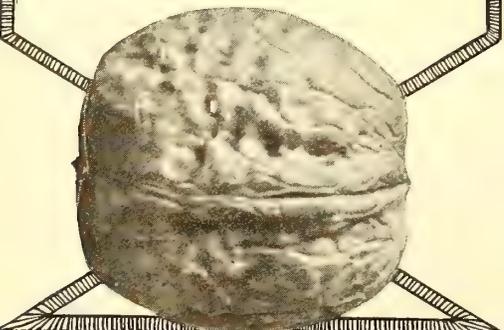
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Besides producing food and profits the trees make desirable lawn trees; they grow shapely, furnish good shade, and fit well with shrubs and evergreens.

Special Catalogue of Nut Trees

will be sent to you on request. Pictures show how the trees grow; story tells how to plant and care for them. You will read it from cover to cover—send for it now.

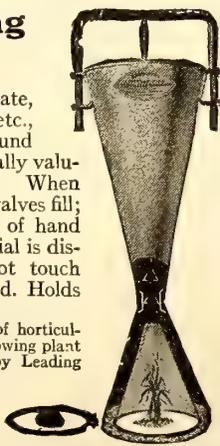
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Places any material, phosphate, nitrate, lime, salt, ashes, etc., in measured quantity, around seed or growing plant. Equally valuable on large or small area. When lifted, handle pulls up and valves fill; when set over plant weight of hand depresses handle and material is discharged. Material does not touch plant. Amount can be varied. Holds twenty-five pounds. For the first time in the history of horticulture it is possible to nourish a growing plant in a scientific way. Endorsed by Leading Agricultural Experts.

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THE LURE OF THE SEEDLINGS

BECAUSE we have become accustomed to growing many of our garden plants by means of vegetative parts, namely, bulbs, tubers, and cuttings, we are likely to overlook the fact that these plants may also be grown from seed. To be sure, some species are none too liberal in the matter of seed production, but when seed is obtainable, the flower lover will find propagation by this means a most interesting diversion.

For a few cents a packet of Dahlia seed may be purchased of a reliable dealer. If planted indoors in early spring the young plants may be transplanted to the garden when danger of frost is past and most of them will bloom the first season. From a packet of seed of mixed varieties, I have secured a marvelous array of blooms and at the end of the season a stock of tubers that would cost many times the amount originally invested in seed.

The Gladiolus is another plant that is easily grown from seed, though the resultant bulbs do not produce flowers until the second and in some cases not until the third season. These seeds are not readily obtainable from dealers so that one has to depend upon the supply from the home garden. The seed pods must be gathered immediately upon ripening, as they are liable to split and allow the seeds to drop out. After separating the pods from the seeds, the latter are best cared for over winter by placing in a wide necked bottle of sand.

In preparing the seed bed for their reception, use sheep manure and a small quantity of bone meal, mixing thoroughly with the soil to which a liberal amount of sand has been added, or the seeds may be planted in an eight inch bulb pot, which is then sunk so that the top of the pot is level with the surface of the ground. The seed should be planted rather thickly at a depth of a quarter inch.

At the end of the season there will be found small bulbs varying in size from that of an apple seed to the proportions of a hazel nut. These should be stored over winter as ordinary bulbs, replanted the following spring, and many of them will produce their first blooms before the end of summer. Aside from the fascination of seeing these "garden babies" develop, there is always a possibility of finding some interesting variations from the parent forms.

The Geranium, which is usually grown from cuttings, and the Heliotrope, whose delightful fragrance makes it welcome in any garden, are produced very easily from seed, and from a packet of Coleus seed can be grown plants displaying a surprising assortment of colors. The Calla-lily may also be mentioned among the plants which lend themselves to this method of propagation.

If you have never tried growing seedlings, you have missed one of the real pleasures of gardening and those who have the patience to wait for the blooms are well repaid.

NEW GLADIOLUS REGISTERED

THE following varieties of Gladiolus are registered with the American Gladiolus Society by John Lewis Childs, Flowerfield, N. Y.

Conspicuous (Childsii). Beautiful clear cardinal-red, with a large white throat. A very attractive combination of color. Originated by John Lewis Childs.

White America. Buds and partially expanding flowers pale flesh, 136 (3/4). Flower opens snow white, 2(1), with a faint streak of violet mauve, 195(1), or paler in the throat. Has the same strong habit of growth, form of flower and substance as America, of which it is a seedling.



This new corn has been before the public for three years and thoroughly tested throughout United States and Canada in comparison with all other varieties of sweet corn, and particularly with the once popular Golden Bantam. It has been pronounced superior to all others.

The most particular attention has been paid to the quality, for earliness and great size would count for nothing without this crowning virtue. It is because of the extreme tenderness, combined with the exquisite rich sugary flavor that the Golden Giant has become the standard of perfection for sugar corn the world over, and when you consider that its admirers report that it is one to two weeks earlier, and two to three times as large, and better in quality than its own parent, the Golden Bantam, you may be sure it has well earned the title "**The New Master of the Fields.**"

DeLue's Golden Giant excels all other early varieties in size, productiveness, and quality, and all the late varieties in quality and early maturity.

It is the one corn for the home or market gardener who wants the greatest amount of highest quality corn in the shortest period of time from the smallest piece of land.

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Mr. P. P. R. says: Boston, Mass., Apr. 27, 1917. "I have had a great many years in farming and never in my experience have I seen a corn that produces such large, well formed ears and a corn which was as juicy, tender, and sweet."

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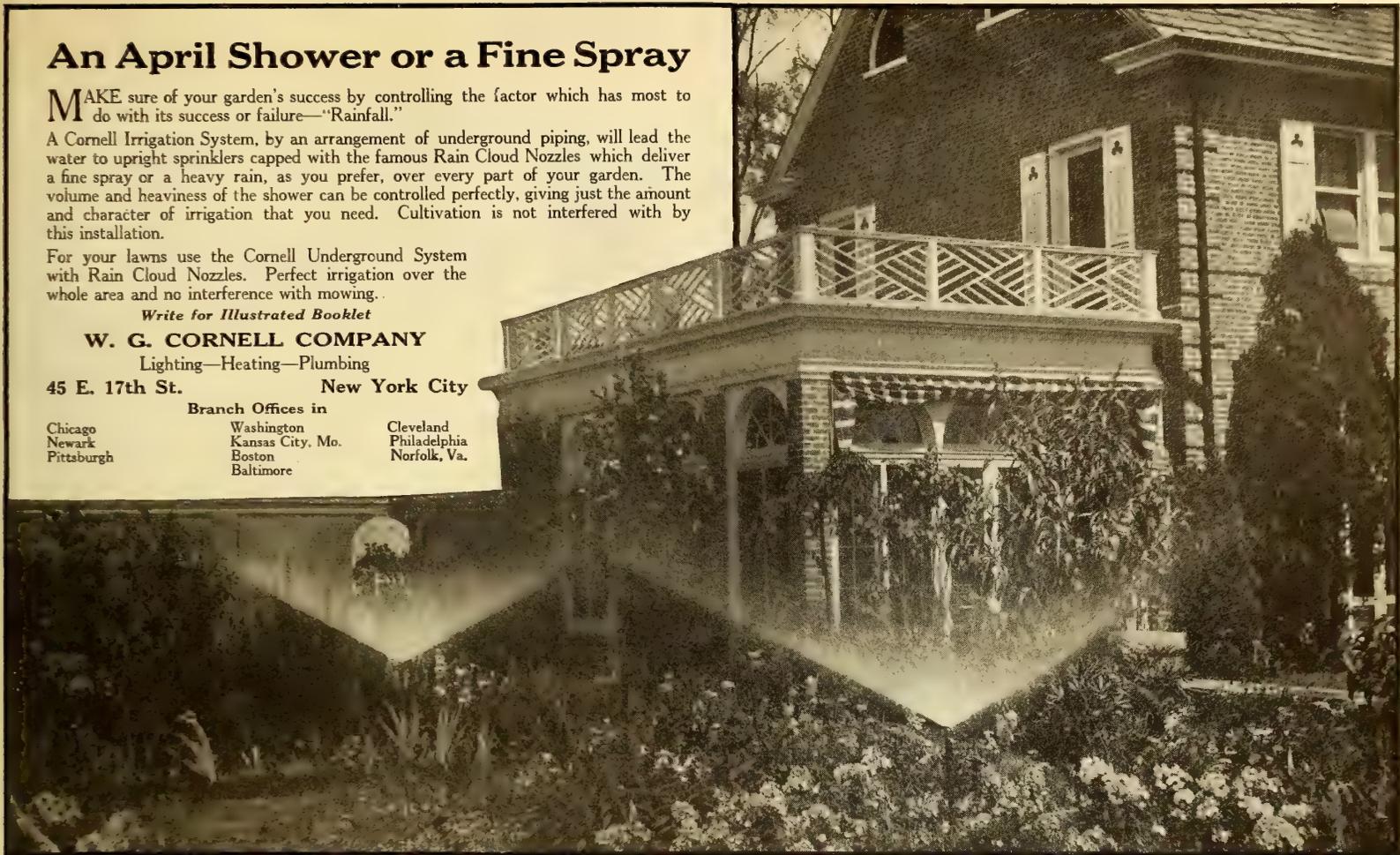
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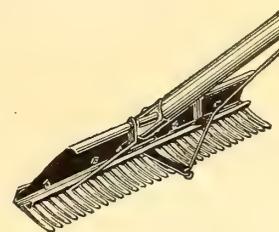


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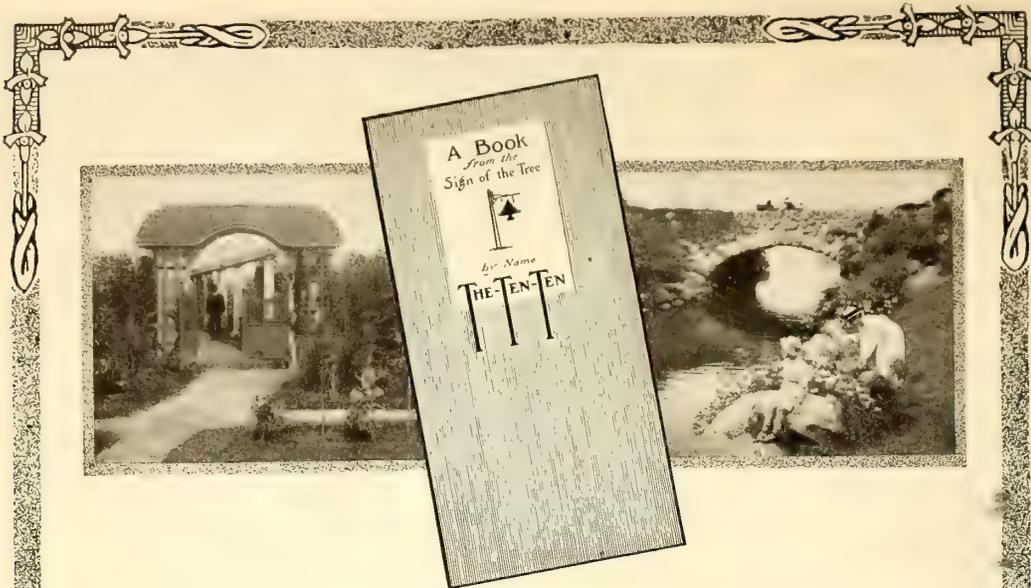
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It always has seemed to us, however, that gardening, done the way it can so easily be done, would give so much more pleasurable satisfaction.

With that, and two or three other things in mind, we made The Ten-Ten Catalog of our seeds, hardy plants, roses, and evergreens.

Aside from the dependable fact that everything in the Ten-Ten Catalog can be thoroughly depended on—it's all grouped in tens. Ten of the best roses. Ten of the best iris. Ten of the best asters. Ten of the best annuals. Ten things that ought to be in every vegetable garden. Ten ways of making the garden you make, make more for you.

And so on, everything in tens.

All of which, you at once welcome as the happy solution to that headachy job, of making selections from catalogs, containing more varieties,

of more things, than any mortal could plant in a life time, if they began when they first learned to walk.

For your further convenience, there is only one column to a page, and the print is as big as you have always wished it was.

When a thing is named and described, it is promptly priced.

You don't have to be a Sherlock Homes to find it; or a mathematician, to figure out the cost.

Another thing—it's getting late, and you can easily make quick selections from The Ten-Ten.

Likewise, depend on our making prompt shipments.

Let us send you the Ten-Ten with our compliments.

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Native Rhododendrons and Kalmias in Car Lots, at Reasonable Prices

Our collectors have secured a splendid lot of Rhododendron maximum and Mt. Laurels, in extra fine plants, for spring delivery. These are the ideal hardy broad-leaved Evergreens for massing or grouping under trees, large shrubs and along borders. **Fruit trees and Rose bushes.** Get our prices NOW.

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THREE WAYS TO GET RID OF DANDELIONS

EXPERIMENTS made at the Colorado Agricultural College show that there are several ways in which Dandelions may be eradicated from lawns. There is first the familiar and common method of digging them out which, as usually done, is a waste of time; for when a Dandelion root is cut off near the top, it simply gets very busy and produces several plants! But when the digging is done early in the season just before the plants mature seed, and again in the autumn, the weed can be kept in control fairly well, providing seed is not introduced from other sources.

Dandelions spread mostly from seed. Seven days are required after the first day of blooming for the seeds to reach the germinating age. If all flower heads are cut off once a week, there will be no seeds, but many flower heads are missed because they lie too close to the ground to be reached by lawn mower blades. An excellent tool especially designed for gathering them is really a rake with protrusions that resemble a saw blade except that they are longer. With this the young flower buds, the heads in bloom, and the seed-ripening heads may be gathered in one operation. Of course, the plants remain, but they can be gradually dug out.

It is possible to dig deeply enough to remove the whole plant, and this method can be used advantageously when the number is not large. It is often followed in public parks, sometimes for areas which cover several hundred acres. The work is best done when the ground is rather soft, following a rain. A tool which has a blade eight inches long and one inch wide is used, the blade being thrust into the soil about four inches from the plant, and at an angle of forty-five degrees. The root is not cut off, but pried out by pushing down on the handle of the tool. Of course this is laborious and defaces the lawn somewhat; but it is most effective, and the addition of a little grass seed will soon cover the bare spots.

An altogether different way of eradicating the Dandelion is by means of herbicides, gasolene and kerosene being among the most useful. A teaspoonful of gasolene applied in the centre of a Dandelion plant will usually kill it, although twice as much may be required for very large plants. Usually the leaves will wilt very quickly, and the plants appear quite dead in a few days. Sometimes the entire root shrivels up and can be pulled out of the ground. Something which drives the gasolene into the head of the plant is best for making the application—often a large sized oil can will serve. The fluid may kill some of the grass around the plants, but reseeding will remedy that. Kerosene is about as effective as gasolene, and should be used in the same way or a smaller amount of coal tar creosote may be used, from a quarter to a half teaspoonful being enough for each plant. This method of exterminating the Dandelion is one which can be adopted to advantage by the owners of suburban and village places.

A SPRAY FOR ALL WEEDS

Finally, there is the spraying method, which is really the cheapest and most effective when a lawn is badly infested. A solution of $1\frac{1}{4}$ pounds

(Continued on page 138)

The New Britain Tractor



Dealers:
We are ready to close with responsible dealers who are sufficiently aggressive to profit to the utmost by our national advertising. Write, stating lines now handled

JUST think of your real need of a high-grade, small-size tractor—compact, powerful and with unusual stability—that will out-work any horse at cultivation or soil preparation; out-distance, out-tire and out-last him; and then starve him to death in economy of maintenance!

Such a machine is the New Britain Tractor. Guided as easily as a wheelbarrow and occupying little more space—no complicated controls—no awkward cranking.

It will plow, harrow, disc, cultivate, drill or haul any one-horse implement or load. It will dodge obstructions, work between narrow rows, straddle crops 8 to 13 inches high, creep under low branches, and work up as close as you want to fences, walls, and bushes.

Still more! The New Britain Tractor delivers 6 h.p. on the belt and drives saws, grinders, silo fillers, pumps, dynamos, or other machines within the limit of its power.

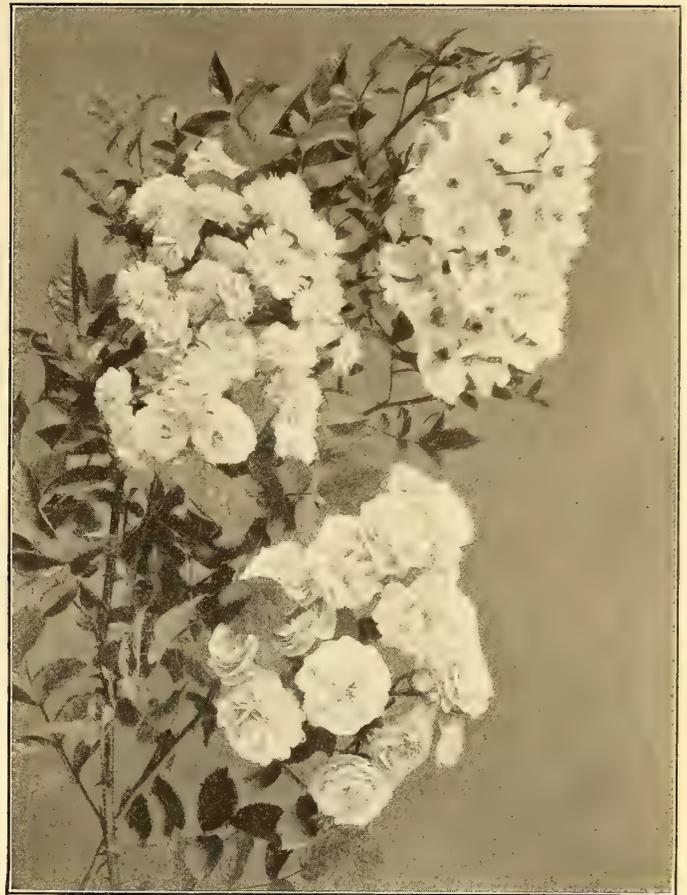
In design, workmanship, and material the New Britain Tractor has no superior in any tractor at any price. It is built by mechanics trained to precision work in fine materials, in a factory world-famous for thirty-two years for the excellence of its products.

Built in two models. Both are described in detail in booklet, sent free on request.

THE NEW BRITAIN MACHINE CO., New Britain, Conn.

Branches:

New York Philadelphia San Francisco Detroit Cleveland Chicago



FARQUHAR "BOSTON BEAUTIES" PILLAR ROSES

ROSES? Yes, The Unusual Kinds

From its very beginning R. & J. Farquhar has striven after the unusual. If we learned of a better shrub, a rare new flower, or new vegetable of greater economic value, we would spare neither effort nor expense to get it. Most of Mr. Wilson's remarkable introductions, about which Garden Magazine readers have read so much, may be secured from us exclusively.

The Farquhar Catalogue

Is unique in that it includes many of the new and unusual plants of the Arnold Arboretum collection, as well as other rare plants not obtainable elsewhere. It will be mailed on request.

R. & J. Farquhar Company

6 South Market Street

Boston, Mass.

Horse Disadvantages Go When The *Moto-Mower* Comes

Spring brings soft ground, and horse's hoofs are heavy. You either wait, and the grass gets too long, or you put such holes in the ground as a season's rolling can hardly level.

Moto-Mower Does Double the Work With Half the Power

and it does it neatly. It weighs less than the operator, and is a mule for work and pull. Of simplest construction; under perfect control. Will go wherever a man can walk and is always ready at a moment's notice.

Strongly built of best material to

give life time service. Valuable self-sharpening features alone make it worth more than any ordinary machine. Yet low in first cost, low in up-keep—economical in everything—as all *best* things are in the long run.

Descriptive Booklet Supplies Further Facts

Learn how the working out of an entirely new thought in motor application succeeded in reducing weight and increasing usefulness; how, by reducing machinery we increased handiness and efficiency. An inquiry incurs no obligation.



PONTIAC LAWN MOWER COMPANY

Garfield Bldg. Detroit, Mich.

Made in 24 inch and 30 inch sizes.
Prices on request.

(Continued from page 136)
of iron sulphate to a gallon of water seems to give the best results. The solution must be applied at least three times, at intervals of about two weeks. In Colorado the most effective results were obtained in late summer. It is important that the spray be applied in the form of a fine mist driven forcibly into the crowns of the plants. Cloudy, damp weather is particularly favorable if the application is not followed by rain within twenty-four hours.

This material is damaging to most metals, therefore it should be used in a spray pump having brass fittings, and never put into any iron, galvanized iron, or tin vessels. Moreover, all utensils must be thoroughly rinsed with water after the work has been completed, and the movable parts of the pump kept well oiled. It is likely to cause a rusty stain if it touches walks and curbs, so should be used carefully, or some sort of protecting material laid down. The weak solution does no serious injury to the grass, although it may seem to affect it at first. That part of the lawn sprayed however will eventually take on a greener hue than before—but it is deemed advisable to pay particular attention to watering and mowing the lawn, in order to encourage the growth of the grass. And White Clover, if present, will probably be killed out.

HOW TO MAKE A "CROSS"

THE essential point in crossing is to prevent the stigma of the chosen seed-parent from being pollinated by any flower except the one desired as a pollen parent. In order to accomplish this: (1) remove all flowers that have opened and shed any pollen; (2) select several buds that look as if they would open in a day or two, and gently pulling their segments apart hold the bud open with the fingers of the left hand while the immature anthers are removed by the fingers or by means of tweezers. Be sure that you take out all (six in Liliun).

Cover the bud with a paper bag, leaving it for two or three days. Then remove it and examine the stigma, the knob-like end of the pistil. If it be viscid and glistening in the sun, it is ready for the pollen of the chosen species. Cover it well with pollen and replace the bag, keeping it on until the stigma withers and further danger of foreign pollination is past.

The paper bag has certain disadvantages. Damage to some of the flowers in removing or replacing the bags, is certain; and on a warm day, the atmosphere inside the bag will become hot and steamy and may prevent seed formation. On a large scale omit the bags entirely, but take extreme pains to keep all the buds on the patch emasculated. This method is practically as exact as the former method if the different species are planted in isolated groups in different parts of the garden. Its great drawback lies in the necessity for the rigid surveillance of every bud.

Give each cross some distinguishing mark, or write the names of the parents on a label and fasten it to the flower stalk.—H. E. GILKEY.

[Though the method of procedure here outlined refers specifically to work on Liliun, still the same principles apply in general to all ordinary flowering plants. The smaller the parts or the more intricate the work the more difficult is the handling, necessitating practise and patience.]

Farr's Specialties for Early Spring Planting



Year after year the garden increases in charm and value as the shrubs and plants increase in size and blooming power. Early spring is a desirable time for setting most plants, and in my collection at Wyomissing may be found specimens that are suitable for every phase of gardening. A few are here noted—to list all would be impossible:

Japanese and Asiatic Shrubs—Berberis, Flowering Cherries, Enkianthus, Cotoneasters, Corylopsis and others.

French Lilacs, Philadelphus and Deutzias—a complete collection of Lemoine's new creations.

Rare Specimen Evergreens for the formal garden, lawn groups and rock gardens.

Hardy Asters, Phloxes, Delphiniums, Chrysanthemums and other perennials for spring.

An Emergency Edition of Farr's Hardy Plant Specialties (issued because of the great demand for the sixth edition) will be sent to those who request a copy.

Bertrand H. Farr, 104 Garfield Ave., Wyomissing, Penna.

Wyomissing Nurseries Co.





Japanese Turquoise Berry

Grows 6 feet high. Showy flowers in May. Blue berries in September. So pretty one wishes they might linger all the year instead of only six weeks. We hope we have enough to go around.

We have illustrated this and a few other rare shrubs in their true colors in a new booklet appropriately called

"A Feast of Flowers"

We have just 500 copies left. Naturally the most interested will be the first to write. It is free.

Hicks Nurseries, Box M, Westbury, L. I., New York

Hardy Native Plants, Ferns and Azaleas

Announcement for 1920

My 1920 catalogue with many illustrations of hardy native plants, ferns and azaleas, is now ready, and I should be pleased to send you a copy if you are interested in such plants.

For 40 years I have been growing ferns, wild flowers, orchids, azaleas, and many other hardy native plants that are of great value in the rock garden. It has taken many years of painstaking labor, and a great deal of expense to be able to offer this collection. I am especially proud of my collections of ferns and azaleas.

My stocks not only include these rare plants, but they are sufficiently large to enable me to take care of large as well as small orders.

I also have choice stocks of native rhododendrons, laurels, evergreen shrubs and perennials of all sorts.

EDWARD GILLETT

3 Main St. Southwick, Mass.



Osmunda Claytoniana

Our Collection of Native Ferns Is The Best In America



Make Sure The Success Of Spring Plantings

Now that all the spring planting is planned, make its success a certainty. *Lack of water* is the direct cause of three-fourths of all failure in the flower beds and borders, and in the vegetable garden. Skinner Irrigation provides a fine, misty rain whenever and wherever you want it.

Works by itself—fits any size or shape of garden—costs less than hose.

Our new book, *Irrigation for the Home Grounds*, describes our portable, elevated and hidden systems. Send for your copy to-day.

The Skinner Irrigation Co.
219 Water St. Troy, Ohio

SKINNER
SYSTEM
OF IRRIGATION.

WHEN MULTIPLICATION IS NOT VEXATION

THERE isn't anything easier in the world to propagate than Climbing Roses. And here is the easiest way to do it:—after the blossoms fade take the flower stems or side shoots all along the main canes, for cuttings, making them about four to six inches long and cutting them just below a bud at the bottom and above at the top.

ROSES FROM CUTTINGS

Set them an inch apart in a box of wet sand, in the sunniest exposure you can find—and keep them wet. And you'll have a nice lot of rooted cuttings in the course of five or six weeks. I started cuttings three years ago, though I didn't know just what I was going to do with them at the time. But the Climbing Rose bug bit me severely and I raised them anyhow; and last fall I transplanted forty two-year-old plants that I had allowed to grow along in a tangle until I could decide their fate. They had grown five to eight-foot canes with no attention. And I knew what I wanted of them. Wire fences are specially made for them. A wire fence is no thing of beauty but nearly everybody has one somewhere around the premises. Plant Climbing Roses to tie to the wire. This idea has taken a firm hold through northern Ohio and Indiana and while travelling through these states the latter part of last June it was surprising to see the number of cottages with wire fences about them gay with Ramblers.

ROSES FROM SEED

Then, too, there is the fun of growing them from seed, which is an easy matter—and perhaps you may raise a fine new Climbing Rose. Again, you may not! But here is the simplest way to try. In the fall when the hips have turned red, break them open, separate the seeds and plant them about half an inch deep in a row, somewhere handy to mark—and leave them to their fate. In the spring some fine day you will be surprised to see baby Roses. They do not germinate uniformly, so do not disturb the row except to transplant them. I have a fence planted with ten bushes from seed which ought to bloom this year. If they are worthless they can be thrown away. If they prove to be good ones, there they may remain.

Of all the Ramblers—a term which seems to belong more strictly to the Wichuraiana types which will ramble along the ground as happily as up in the air—Hiawatha is the most brilliant I have seen, with its great bunches of little Roses, crimson at the tips with a contrasting white centre. Excelsa is another brilliant one, a deep rose color of the Dorothy Perkins type. Thousand Beauties (I prefer the English equivalent of Tausendschoen) is a larger individual flower in various shades of pink from almost white to a deep pink in the aging blooms. Christine Wright is a fine light pink, large flowered and a rampant grower.

All of them are beautiful in flower and have fine foliage to disguise a chicken yard fence or other unsightly wire barrier if pillars and arches are not available.

SHERMAN R. DUFFY, Chicago.

Strawberries De Luxe

Kevitt's Jubilee—The New Black Strawberry

The last word in Strawberry Hybridization. The wonder Strawberry of the century. Perfect flowering variety. The greatest producer known. Pot grown plants. 12—\$2.50, 25—\$4.50, 50—\$8.00, 100—\$15.00. Illustration one-fourth actual size.



Beal. Greatest producer under severe conditions. The sensation of last year. 25—\$3.00, 50—\$5.50, 100—\$10.00.

Standard varieties such as **Barrymore**, **Marshall** and **Sharpless**, 100—\$6.00, 1,000—\$50.00. Circular on request.

WILLIAM M. HUNT & COMPANY
148 Chambers Street New York, N. Y.

FAIRFAX ROSES

The Aristocrat of Rosedom, no garden complete without my hardy everblooming roses. Grown under natural conditions. My free 1920 guide on "How to grow roses" sent on request. I also have a select grade of GARDEN seeds.

W. R. GRAY

Box 6 OAKTON, VA.

MAKING SUCCESSFUL GARDENING A PLEASURE

So Quick and Easy

Simply place a sealed cartridge in the Key Duster Gun—that's all. The Gun AUTOMATICALLY opens the cartridge effectively spreading Insecticides and Fungicides just as required.

NO HANDLING, MIXING, WEIGHING OR MEASURING OF CHEMICALS and WITHOUT THE USE OF WATER

Now you can have desired vegetables, flowers or fruit thriving growths—free from insects and blight without all the trouble of old fashioned spraying methods and devices. All because Insecticides and Fungicides—standard kinds for every purpose—come in handy SEALED CARTRIDGES—just what you need. And they're always ready to use—instantly—without waste. You don't have to bother with water. You don't have to mix disagreeable chemicals.

It will pay you to investigate Key Duster Gun simplicity and Cartridge convenience because these cost so little—and mean so much to you in maintaining **THE PRODUCTIVENESS OF YOUR GARDEN OR FRUIT, THE BEAUTY OF YOUR FAVORITE FLOWERS OR SHRUBS.** Write for Free Particulars

INTERSTATE CHEMICAL COMPANY

Manufacturers of High Grade Spraying Materials for over twelve years

14 Bayview Ave., Jersey City, New Jersey

KEY DUSTER AUTOMATIC GUN

Price **\$3.00**

CARTRIDGES 15c each

Supplied through your dealer or sent direct on receipt of price.



Your Seedman, Implement Dealer or Hardware Store Can Serve You

Where Melrosine has been used



Without the use of Melrosine

The Rose Bug Is Doomed!

This surely must be happy news to every rose grower. Mr. Maurice Fuld announces the first and exclusive offering of

MELROSINE

(Trade Mark)

THE only really effective remedy for the riddance of the rose bug, that beastly insect that eats the flower just before you are ready to pluck it.

Melrosine is a liquid spray which should be diluted with 20 times the amount of water. Sprayed directly on the flower it leaves no spot nor blemish.

No disagreeable odor.

Non-poisonous to animals, birds or children.

Must be sprayed daily while the rose bug is present.

Full detailed cultural directions on each can.

Melrosine has been tested and is endorsed by scores of the most eminent rosarians in America.

Melrosine is sold as follows: Sample can (enough to make one gallon of diluted mixture) 50c. Pint Can \$1.00, Quart \$1.75, Two Quarts \$3.25, Gallon \$6.00.

Order now to avoid disappointment for the demand for such a helpful insecticide will surely be world-wide.

MAURICE FULD, Plantsman—Seedsman
7A West 45th Street, New York, N. Y.



The Value of Screens of "Pearl"

PROTECT your home and the health of your treasures against germ-carrying insects night and day. Flies and mosquitoes are the greatest carrier of disease known. Keep them out. Screen your door and windows; screen your porches, and especially screen your sleeping porch—with PEARL WIRE CLOTH.

PEARL WIRE CLOTH is a health as well as a comfort necessity. Its patented metallic coating gathers no dirt—keeps it clean—makes it sanitary, beautiful and lasting. Lasts longer, and so is therefore most economical.

Buy only the genuine. Two copper wires in the selvage and our red tag on every roll.

Call on our local dealer or write direct for samples and literature if you're interested in screen material. Address Dept. "G."

The Gilbert & Bennett Mfg. Co.

New York Georgetown, Conn. Chicago Kansas City

G & B PEARL is made in two weights—regular and extra heavy
The best hardware dealer in your city sells "PEARL."

*There is more health
in a well screened
house than in many a
doctor's visit*



GLADIOLI WITH FAMILY TREES

Many of my choice offerings represent years of breeding by best-known growers in America and abroad.

Exquisite color schemes with these stately flowers are suggested in my catalogue, both for the garden and indoors.

A copy for the asking.

W. L. CRISSEY *Gladiolus Farm* Boring, Ore.

TRANSPLANTED SEEDLINGS OF SUMMER FLOWERING ANNUALS

It is now unnecessary to go through all the trouble, worry and uncertainty of raising your own annuals from seed. We offer fine, strong, healthy transplanted plants delivered to your home, postage paid, at the proper planting time.

SNAPDRAGONS, pink, yellow, red, assorted.
STRAWFLOWERS, pink, red, yellow, assorted.
CALENDULA, orange.
COSMOS, Lady Lenox.
ZINNIA, giant mixed.
MARIGOLD, tall, dwarf.
ASTERS, late branching, Rochester, Imperial white-light, pink, rose, purple, assorted.

Price: Dozen—50c: 100—\$3.50: 25 of a kind at 100 rate. Send for list of pot grown Salvia, Geraniums, Vincas, Petunias, Cannas, Coleus, etc.

THE PARK GARDEN COMPANY
770 South Avenue Rochester, New York

THE AMERICAN ROSE SOCIETY

Department of Plant Registration

THE following registrations of varieties of Roses have been approved by the registration committee of the American Rose Society, and unless objections are received in the secretary's office within three weeks of the publication of this notice the registration will become permanent.

Doctor Huey; Class: H. W.; Parentage: Ethel x Gruss an Teplitz; Description: Habit of plant, climber; character of foliage, good; freedom of growth and hardiness, good; flower large, semi-double, dark maroon in color. A free-flowering variety with good lasting qualities. Introducer: George C. Thomas, Jr.

Bloomfield Progress; Class: H. T.; Parentage: Mary, Countess of Ilchester x General MacArthur; Description: A strong-growing, bushy plant with red double flowers of strong fragrance; petalage over 50; freedom of bloom and lasting quality very good. This Rose is similar to General MacArthur, but differs in habit, size and form of flower, having superior qualities, as it holds the centre better and is larger than General MacArthur in hot weather. Introducer: George C. Thomas, Jr.

Bloomfield Abundance; Class: H. W.; Parentage: Sylvia x Dorothy Page Roberts; Description: A bushy plant, 3 to 6 ft. in height, with dark green, glossy foliage, not susceptible to mildew; flowers, salmon pink, double, produced singly and in sprays. This Rose is similar to Cecile Brunner, but is hardier and of a larger bloom. Introducer: George C. Thomas, Jr.

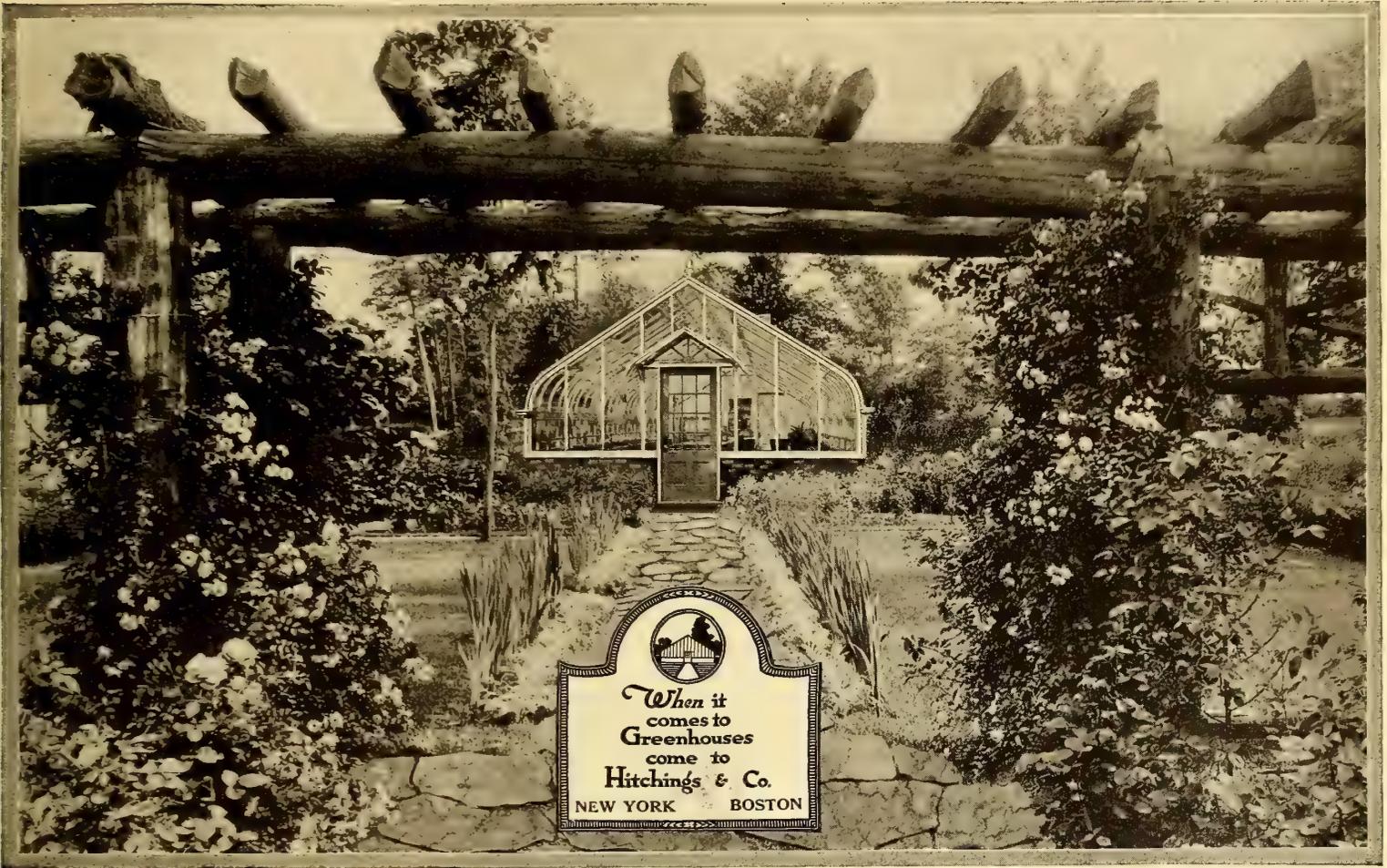
Bloomfield Perpetual; Class: H. P.; Parentage: Iceberg x Frau Karl Druschki; Description: Habit of growth, bushy, 3 to 5 ft. in height, with good green foliage; flowers, white, single resembling Cherokee; a very free-flowering variety with good keeping qualities. The Rose is similar to the Cherokee in flower, but differs in having a bushy growth which is hardy in Philadelphia, and blooms until November. Introducer George C. Thomas, Jr.

REGISTRATION OF NEW ROSES

Frederick R. M. Undritz, West New Brighton, S. I., N. Y., has requested permission of the Executive Committee of the American Rose Society to change the name of the variety of Rose registered by him August 23, 1917, as "Frederick R. M. Undritz" to "General John Pershing." Inasmuch as this Rose has not yet been disseminated, the Executive Committee of the American Rose Society voted to allow this change of name.

General John Pershing. H. W. Dr. W. Van Fleet x Mrs. W. J. Grant (Belle Siebrecht). Climber. Foliage same as Dr. W. Van Fleet; very vigorous, perfectly hardy; flower double, four inches in diameter, dark pink, centre projecting, medium long, quite fragrant; bud pointed and firm; fifty-three petals, curved, stiff, centre close; blooms profusely in June; may bloom later; lasting quality, on bush five or six days.

E. A. WHITE.




 When it
 comes to
 Greenhouses
 come to
 Hitchings & Co.
 NEW YORK BOSTON

"ADJUSTO" PLANT SUPPORTS

When you write,
ask for our free
catalogue



This is the
way you
adjust it

AN absolutely indispensable appliance for the up-to-date garden either vegetable or flower. A sturdy, hard-wood stake $\frac{7}{8}$ of an inch square, 3, 4, or 5 feet long, with a strong wire support instantly adjustable to the required height, with no tool except the hands. Stake and wire painted green making them inconspicuous.

The "Adjusto" saves space because it keeps your plants in the air and sun, and from the ground. Enables you to cultivate close to the plant and so increases growth and fruitfulness. "Adjusto" supported tomatoes ripen to perfection. "Adjusto" supports bring out the full beauty of Dahlias, Chrysanthemums and all the slender, tall-growing varieties. They will help you to grow premium-grade blooms, either for your own enjoyment or exhibition.

Buy "Adjustos" at a garden-supply store or write direct to us

FORREST SEED COMPANY
Cortland, N. Y.

Honest Seeds, Honest Prices, Honest Packages



Let Us Assist You In Your Planting Problems

OUR 800 acre nursery, one of the largest, oldest and most scientifically cultivated in America, is replete with a multitude of varieties in
PERENNIALS—SHRUBS—EVERGREENS

Our service department suggests:

RED JAPANESE MAPLES

(Japonicum Nigrum)

For Lawn Planting

Our stock is strikingly rich in color of an especially clear, vivid, and lasting strain.

All specimen plants—2 to 3 ft. high, \$3.75 each, 4 to 5 ft. high, \$5.75 each, 5 to 6 ft. high, \$8.50 each.

Send for our catalogue.

"Successful for over a century"

AMERICAN NURSERIES

SINGER BUILDING
NEW YORK

FOR BETTER GARDEN CROPS

Of course you will have a "thrifty garden" this year? And you hope it will produce plenty of fresh vegetables for the table all summer long, with a good extra supply to can for next winter? All right! Just lay a row of "Sub-Pipes" between every third or fourth row—they will "water the roots directly"—make your garden produce a succession of big crops all summer long. "Sub-Pipes" will also keep your lawn fresh and green until frost—will produce better orchard and garden crops. The

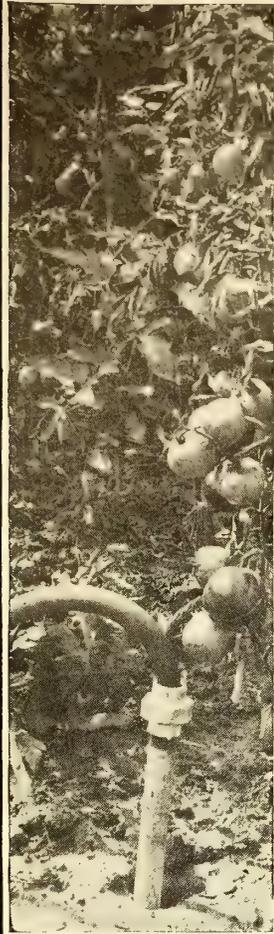
"SUB-PIPE" SYSTEM Of Irrigation

produces abundant vegetation with the least expenditure of time, water, and money. Simple—inexpensive to install and to operate. No water is lost through evaporation or through the necessity of thoroughly drenching top soil before water will penetrate to the roots. You can water at any time without injury to vegetation. "Sub-Pipes"—made of California redwood—last for decades—cannot get clogged up.

GET FREE BOOK!

Write *to-day* for our free illustrated booklet. Act now to get full advantage of the "Sub-Pipe" System *this* season. "Sub-Pipes" should be installed early for maximum results.

Sub-Pipe Irrigation Co.
830 A, Mayo Bldg. Tulsa, Oklahoma



TRAINED INSPECTORS NEEDED

A STATEMENT OF POLICY CONCERNING
QUARANTINE NO. 37

[EDITOR'S NOTE:—This statement, adopted by the Advisory Committee of the Massachusetts Horticultural Society, outlines the position of the Society in regard to the Plant Quarantine Order No. 37, and offers constructive suggestions for remedying the present lamentable situation.]

THE Trustees of the Massachusetts Horticultural Society realize the importance of excluding from the United States insects and diseases injurious to plants. They believe that for the good of the nation this work of exclusion should be carried on with intelligence and energy; they do not believe in the methods now adopted by the Department of Agriculture of the United States for the accomplishment of this purpose. They believe that the addition to the Federal Board of Horticulture of a man familiar with plants will add to its efficiency. They believe that with a few exceptions like the White Pine it is not now necessary to exclude plants from this country in order to secure the exclusion of dangerous insects and plant diseases, and that it is safe to import in large quantities for commercial purposes and in small quantities for the use of amateurs, nearly all plants that can be imported more advantageously than they can be grown in this country, if a better system of inspection by men properly trained for the work is adopted. It is known to the Trustees of the Massachusetts Horticultural Society that, under the existing regulations of the Federal Horticultural Board, certain Lily and other bulbs, Rose stocks and fruit tree stocks can be imported without being sent to Washington for inspection but that permits to import even a small number of plants, not already in this country, for scientific study and experiment can be obtained only after troublesome formalities have been complied with, and that under the present ruling plants thus imported must be sent to Washington for inspection. This means that plants brought to this country by ships landing their cargoes at Galveston, San Francisco, Seattle, New York, or Boston must be sent to Washington at the expense of the importer and from Washington must be returned to the importer also at his expense. It is too much to expect that in Washington plants will be carefully unpacked and repacked, that there will not be long delays in the one office in which all the plants imported into this country are inspected, and that they will not be injured in the hands of men who are not specially trained for this work.

This Board, therefore, after a careful study of the subject believes that with the exclusion of a few plants to be named from time to time as necessity for their exclusion is shown, all restrictions on the importation of plants, bulbs, and other roots, and on seeds should be removed, with the exception of that of rigid inspection with the right to destroy affected plants. It realizes that the inspection which is needed to protect the country can only be secured by the employment of intelligent and honest men familiar with plants as well as insects and fungi as inspectors, and by the establishment of additional inspection stations at Boston, New York, New Orleans or Galveston, San Francisco or Seattle. This Board believes that if such a plan is adopted importers, in return for prompt and safe delivery, will be only too glad to pay inspection charges large enough to reimburse, in part at least, the government for this additional expenditure.

Hardy Plant Lore

Have you a border, a rockery, a shady place, or a bare spot that needs special treatment? Do you know just what to plant and how to plant it? Perhaps our experience in growing hardy plants—plants collected from every part of the world—would be of value to you.

Perennials

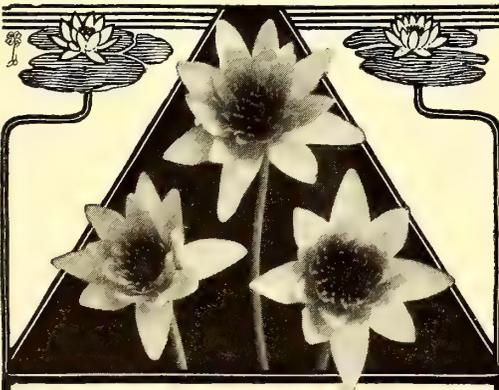
Our collections of perennials have supplied many American borders and gardens with combinations of rare charm and beauty. Let us send you our 1920 Hardy Plant Guide. All we need is your name and address.

Wolcott's for

Hardy Plants

WOLCOTT NURSERIES

Clinton Road Jackson, Mich.



"So Pretty, Yet Remarkably Easy to Grow"

That's what one of my customers said, after she had grown water-lilies in a half barrel. The large tender sorts can be as successfully reared in a tub as in a pool, and they are as beautiful as any flowers you have seen.

You should try Panama-Pacific and Mrs. Wilson, two of the most interesting new varieties. Their beauty is, in itself, enough to make them popular, and in addition they lend to any garden a novel charm which cannot be obtained otherwise. They bloom readily, need very little attention and are quite unusual.

Full Cultural Directions Are Given in My Booklet

in which also are catalogued many rare and beautiful varieties of interest to those who already appreciate the splendor of the water-lily. Many of those sorts have received gold and silver medals because of their beauty and novelty. You can get a copy of this booklet by writing now to my address—as the edition is limited, it is best not to delay.

WILLIAM TRICKER

Box E Arlington, New Jersey

Ordway's Golden Corn

The original strain of the YELLOW SWEET CORN

as grown by the Ordways of New Hampshire for nearly fifty years. It has never been equalled for early growth, tenderness, and sweetness.

Grow as many other varieties as you wish, but depend on Ordway's for your main supply. It is always reliable.

Carefully selected seeds will be sent post-paid on receipt of price.

Half-pint—25c. Pint—45c. Quart—80c.
Trial Packet—enough for 35 hills—15c.

O. P. ORDWAY Saxonville, Mass.

COME FORTH INTO THE
LIGHT OF THINGS; LET
NATURE BE YOUR TEACHER

—WORDSWORTH



This is one of the 24 beautiful paintings illustrating Louise Beebe Wilder's "Colour in My Garden."

They were executed by Anna Winegar, using a section of Mrs. Wilder's own garden for each subject.

(See other side)

COLOUR IN MY GARDEN

by LOUISE BEEBE WILDER

NO ARTIST in the world, with the most sensitive of color instincts, has ever mixed colors as rare and rich, as those that Nature gives us so magnificently in flowers. Every one who has a garden, has fountains and resources of color with which he can make a veritable Eden. From the age-old days of hanging gardens, horticulture has been one of the fine arts. And in his garden, man has been able to indulge his instinct for beauty, as his heart led him.

Does your garden express your individuality; does your secret self show forth from it, as that of the painter comes out on his canvases? Are you perplexed with problems of design and color harmonies? Are your Irises blue enough? Does the hedge set out the flowers, or overshadow them? Are the arbors ripely and richly enough in bloom?

Here, in a beautiful book, dedicated to the art of gardening, will be found answers to all such questions; and suggestions which will be of inestimable help to you in beautifying your garden. The author is an artist in flowers. Her garden ranks among the most beautiful in the country. The illustrations are reproductions in full color—each one a magnificent example of fine printing—of twenty-four paintings from the exquisite subjects of Mrs. Wilder's garden. The text is a delightful telling of her garden secrets, and a summary of her experiences in planning and maintaining her beautiful garden in the full glory of its colors. This is a book that should be in the possession of every lover of art and nature. De luxe edition, limited to 1,500 numbered copies. Boxed, \$10.00.

The Pocket Nature Library

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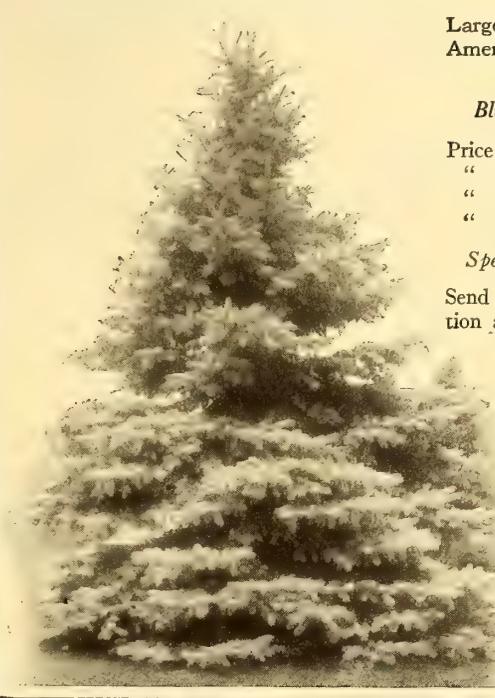
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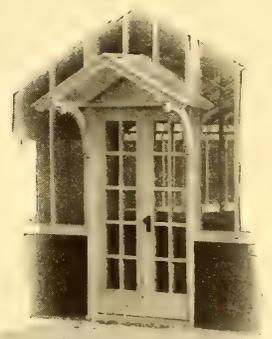


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Marking Drills

THERE are two matters which I have in mind that I believe THE GARDEN MAGAZINE readers should know about. The first is a suggestion which I think is worth passing on for the convenience of those whom it may concern. The second matter is a riddle which I daresay the editor or some good friend will solve for me. The suggestion referred to above is in relation to a simple little device for measuring and marking drills. Every gardener appreciates the use of a garden line in making straight rows and most everybody uses some gauge or tool for spacing the rows. A yard stick or sometimes a graduated hoe handle answers the purpose. My way is to use two yard sticks (the man who sells you your garden tools or seeds should give you these) each cut in two in the middle and the small end, up to 18 inches, nailed or screwed to the line stakes which are 1 inch square and 24 inches long, the yard stick section extending from the top of the stakes to within 6 inches of the bottom which is tapered to a point. The stakes may, of course, be either longer or shorter to suit the individual notion of the operator by the use of more or less of the yard sticks than the 18 inch which I suggest. By the use of this little trick your measuring stick is always where you want it. You don't have to chase it from one end of the row to the other or back to the tool house. It is like unto the poor, always with you. Now to return to my riddle. Who will explain to me why some of my Peonies do not bloom? They have been planted at least nine years, send up each year an abundance of slender canes, but in the nine years I have not had nine blossoms from the six original clumps. When I received them I planted them on rather high ground which was I suppose none too rich. After about three years I moved them down into my garden where other Peonies were flowering beautifully but in the words of the immortal Huck Finn, "Nothing came of it." As yet they have not changed their habits. What will somebody recommend? I do not feel that I ought to commute their sentences. Shall I give them a new trial?

CHAS. EDW. CURTIS, N. Y.

—Now then speak out! Why is it that some Peonies do not bloom?—Ed.

Patriotic Color Notes

ONE fall when I planted six Farnscomb Sanders Tulips in front of a clump each of the old blue Iris and Florentine Iris, I never dreamed they would arrive at approximately the same time and start a grand patriotic parade in my back yard, but that's exactly what they did. The Farnscomb Sanders Tulips bloomed first, about four days later the old blue Iris arrived and two days later along came the delicately scented Orris-root, otherwise the Florentine Iris which, though tinted lavender, is white enough for practical purposes. The effect is gorgeous beyond description, and I have promised myself to have the same parade next May by design instead of accident. Another pretty patriotic color note is to plant old blue Iris and scarlet Darwin Tulips in front of Spiraea Van Houtteii. The Tulips and Iris open first against a background of the green Spiraea leaves, which are followed in a few days by their snowy white blooms that provide the field of pure white against which the nearly blue Iris and red Tulips show to great advantage. Other combinations will suggest themselves, or present themselves, once attention focusses on the idea—or perhaps someone has already found another?

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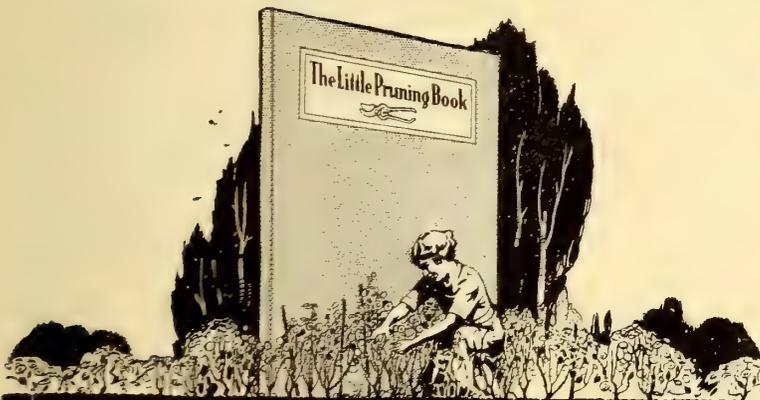
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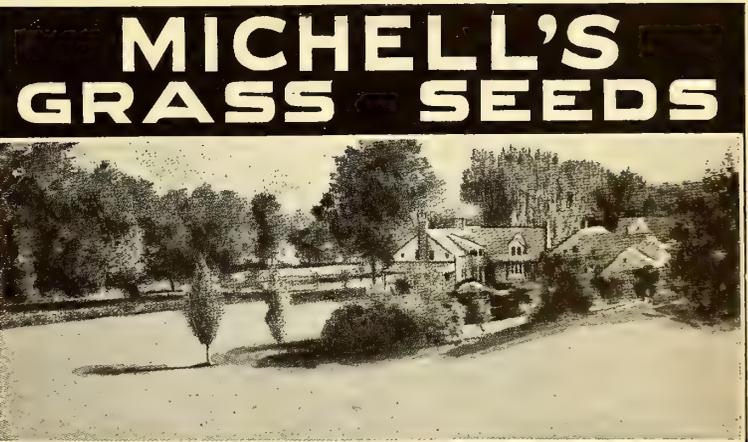
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By June we've started in to spray,
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Scab, blight, and beetles, day by day
Arise and will not be denied.

Anthraxnose comes upon the bean,
And San José upon the fruit.
The Rose is thick with aphid green,
And other enemies to boot.

Hurrah, for winter! We forget
Our disappointments then, and toil.
The pests by which we were beset
In next year's gardening we shall foil!

KATE B. BURTON.

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SIMPLEST METHOD IS TO BRUSH ON THE PRESERVATIVE BUT DIPPING IN BATH GIVES LONGER LIFE

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BRUSH METHOD SIMPLE

The most simple, least expensive, and likewise least effective method of treatment is applying hot creosote with a brush. The creosote or oil should be heated in a receptacle to a temperature of 150 degrees F., or more. Several coats should be given; each coat should be dry before the next is applied. The great drawback in this method is that the coating of oil is on the surface, and if further seasoning takes place and checks develop, the untreated interior of the post is exposed to the decay-producing agencies. The brush treatment is advised only when the other and the more thorough methods cannot be used.

Dipping the post into the hot oil is a much better method. This requires some large vessel, such as a small tank, or empty oil drum, in which a large quantity of creosote can be heated. The oil penetrates every crack and crack of posts plunged in this bath and a complete covering of the preservative is assured.

HOT AND COLD BATH BEST

Better still is the hot and cold bath treatment, in which the post is allowed to remain in the hot oil one to three hours. Then the posts are taken out and plunged at once into a tank of cold oil, or they can be left in the first tank to wait until the hot oil becomes cold. Although it takes more time and costs more, this method will result in a much deeper penetration of the oil and consequently a longer period of life for the post.

Costs will vary with the kind of post and the method of treating. The best creosote now costs 45 to 50 cents a gallon in barrel lots, and in the hot and cold bath treatment from 1/4 to 1/2 gallon

(Continued on page 150)



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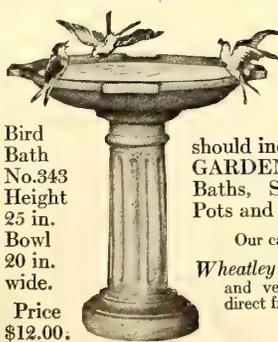
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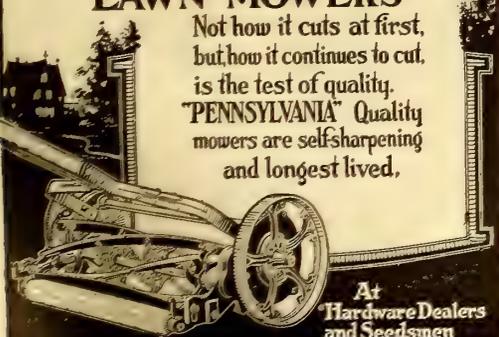
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(Continued from page 148)

is likely to be used for each post. In dipping, the creosote goes much farther and the cost of oil is correspondingly reduced. Brush treatment costs run between five and ten cents a post.

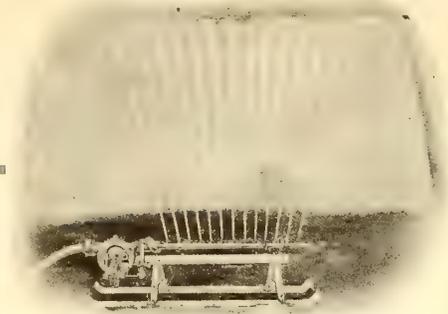
SALVAGE FROM WEEDS

WE HAVE to expend labor to remove weeds and any return from utilizing them is clear gain. In but few cases is the value of any weed great enough to justify gathering it solely for utilization. The most pertinacious of all weeds, all garden weeds, at least, is Purslane, "pusley." "Meaner than pusley" is an ancient comparison. A few people eat Purslane as a "green," but it appears rather late and so many of the very best vegetables have become ready to eat that not many will care to eat what is at best only a mediocre green. But it is the best of all plants to supply green food for hens. It will not wilt for days. The grass, the clover you throw to hens, wilts in a short time, usually before they have eaten much of it. Hens do not eat green stuff rapidly, as they do grain. Before they have consumed it in their leisurely pecking, most of it has wilted and become unappetizing. But Purslane stays fresh until they have eaten every bit, even the stalk.

Lamb's-quarter, or pig-weed (one of the two weeds called Pig-weed), is a far nicer green than most cultivated greens. It is little inferior to green Peas. However, its value for human consumption is lessened by the fact that the period when it can be eaten is short, as it is early attacked by a fungous affection that causes its leaves to be shot with blue. But even so, hens eat it as eagerly as they do clover, and pigs delight in it. "Fattens pigs just as well as grain," say old farmers. Recently scientists have corroborated this belief by telling us of a fat they have discovered in green things, an hitherto unknown fat and we learn that certain sorts of "garden sass" which we supposed we ate for pleasure and their beneficial effect upon the digestive apparatus and gave no actual nourishment, do possess nourishment.

Young Milk-weed is certainly worth much more than the mere labor of gathering it. The earliest of greens except the Dandelion, it makes a fine dish and if any cultivated green came so early and were so good, the seed catalogues would star it. Elecampane, prominent in the pharmacopeia of all herb doctors, is a troublesome weed in many places and makes a rather characterless green that does well enough if you can get nothing better and if you cook your greens with salt pork, bacon, or other things which give flavor, then it is very successful, for it is tender, smooth, bland, an excellent neutral base in dishes whose character comes from some ingredient of marked flavor.

Some people eat Sorrel and others Mustard. The cultivated varieties of these may be good, but the wild varieties have so small a foliage that you can't afford the time to prepare them for cooking. Brakes and Ferns, only occasionally weeds, but among the most stubborn of weeds when they get into the cultivated land, or rather when your plow invades the long uncultivated sod where they hold sway, are every little while declared by somebody to be just as good as asparagus when eaten as young shoots. They are passable, perhaps worth a short trip to the pasture, but it is not likely that they will be consumed in a noticeable degree by other than the one form of insect, bird, or animal life which now eats them, small boys. The Docks, too, are occasionally warmly recommended as greens, but after trying the bitter things, most of us will decide that only an unusual taste is welcomed.



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A HANDY ROSE GROWER'S MANUAL

THE time to decide that you want Roses in your garden is now in Rose planting time, not later on when your neighbors are enjoying their blooms and you are bewailing your lack of them. And that you may choose wisely and plant and care for the flowers as they should be planted and cared for, don't delay in studying up the facts about them. One good way is to send to the New York State College of Agriculture at Ithaca for a free copy of its Reading Course Bulletin for the Farm, Number 121, bearing the title The Culture of Garden Roses. Remember, indeed can one ever forget, that

Roses always roses are—
What with roses can compare?
Search the garden, search the bower,
Try the charms of every flower;
Try them by their beauteous bloom,
Try them by their sweet perfume.
Morning light it loveth best
In the rose's lap to rest;
And the evening breezes tell
The secret of their choice as well,
Try them by whatever token,
Still the same response is spoken;
Nature crowns the rose's stem
With her choicest diadem.

WHAT IS A GROUND COVER?

I SHOULD like to have an exact definition of this term which I see used often in garden writings. How are we to know exactly where to classify any plant?—L. H. R.

My definition of a ground cover plant is very elastic, and not quoted from any authority. I make the purpose for which used the test for plant lists. To me a ground cover is a plant that covers soil, for the purpose of holding it in place, and adding green foliage, colored flowers, or winter effects. There are two sorts: herbs and shrubs. Of herbs, whose primary use is to cover up ground otherwise bare, we think of Pachysandra, English Ivy, Myrtle, etc., and cheap self-supporting herbs as Ferns, Bouncing Bet, Coreopsis, etc., though lawn grass, pasture grasses, clovers, etc., are also soil cover. From the landscape architect's point of view an herbaceous ground cover is a low herb of great vitality that takes the place of grass in formal or wild plantings. Woody ground cover, larger in scale, gives the effect of woodland under-wood, and ranges from Witch Hazel and Red-barked Dogwoods to prostrate Junipers and Rosa wichuraiana. In the broad sense height has little to do with the definition, for Basket Willows are often "ground cover," but practically we do restrict our idea to plants of low dense spreading nature, those that hide the soil surface most completely. STEPHEN F. HAMBLIN. Instructor in "Plant Materials," Harvard School of Landscape Architecture.

HOW TO TREAT LETTUCE PLANTS

IN THE spring I had all my lettuce sown in sunny places. The sun is not strong in the early spring and nearly all seeds need all the spring sunshine they can get. Lettuce and its relations are really cool weather plants and must be treated as such. If I felt it was heading too quickly I covered it over with cheese cloth propped up on branches of trees to shade it from the sun. This discourages any tall growing ideas it may have and makes it head firmly. In the latter part of the summer I plant it under a shade where it only gets the noon day sun. I treat romaine and endive the same way.

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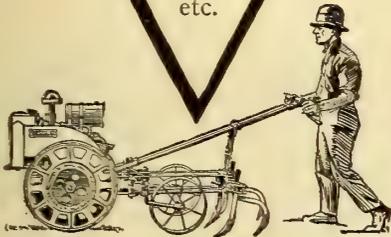
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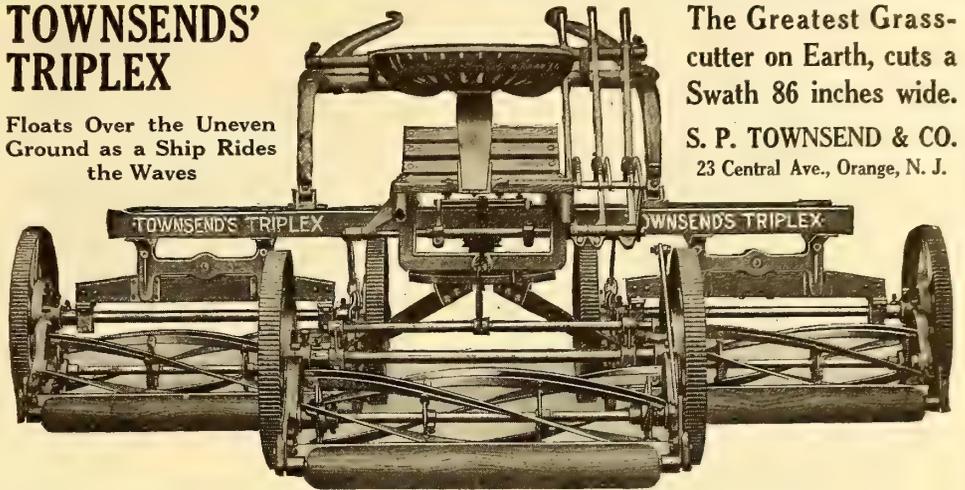
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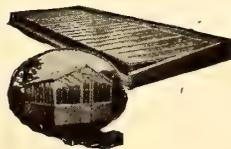


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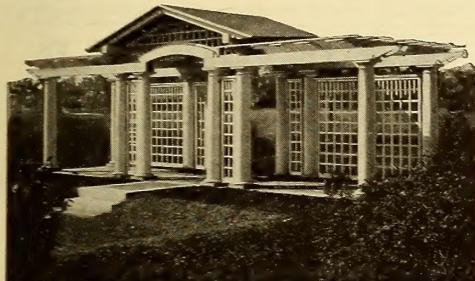


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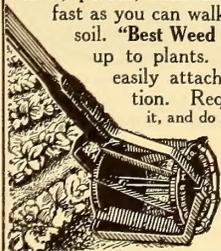
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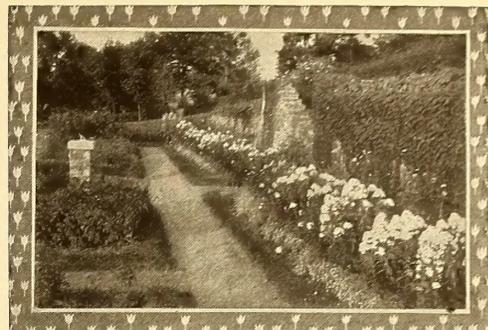
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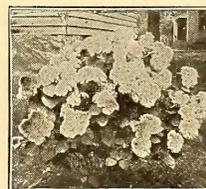
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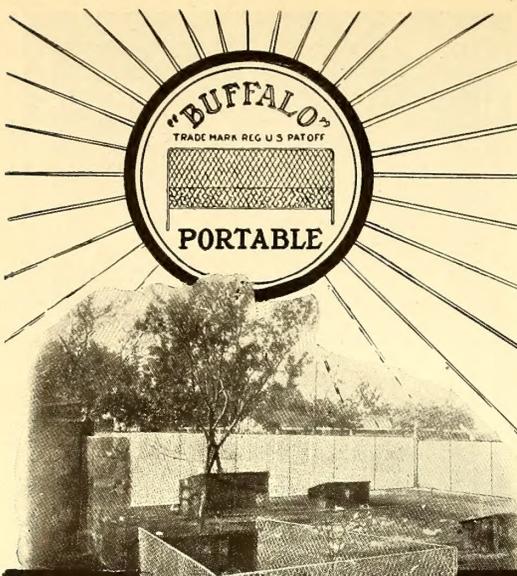


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Will you experiment with a few sections?



IN some way we should like to persuade or coax you to experiment with a few sections of "Buffalo" Portable Fencing. You would immediately put the ban on the old-fashioned style of heavy fixed fences in your yard.

"Buffalo" Portable Fencing sections permit one person to set and also to transfer the fence. This fence is always neat and substantial. Poultry raisers find rotating of yards profitable. It is easy with the "Buffalo" Portable System.

No posts, hammer, fence stretcher, nails, staples, post hole digger, shovel, or mechanic need be called upon! Just set up a fence section at a time—wire the sections together in any desired combination.

Full information—a number of suggested arrangements—different styles, and the prices on the various units will be found in Booklet No. 70-C, mailed upon request with 6c in stamps to cover postage. Why not make your yard attractively unique by the adoption of this thoroughly modern idea?

BUFFALO WIRE WORKS CO. (Formerly Scheeler's Sons) 467 Terrace, Buffalo, New York

Horticultural Gardeners and Landscape Contractors

Specialties
Rejuvenating Orchards—Spraying Tree Diseases, Tree Repair Surgery. DESIGNING—Estates, Parks, Cemeteries, with estimates and specifications. Building Private Drives, Paths, Bridges, Tennis Courts, Lawns, Gardens, etc. Planting Orchards, Specimen Evergreens, Roses, Shrubs, Street Trees, Reforesting.
We grow dependable NURSERY STOCK. Send name and address for Booklet "Beautiful and Fruitful."
Address **NURSERY GARDENS, Unadilla, N. Y.**
or care of **C. A. Jackson, 1011 Press Bldg., Binghamton, N. Y.** or care of **W. A. Smith, Fallsburgh, N. Y.**

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—Unequaled natural fertilizer for lawn, flower and vegetable gardens, fruit and field crops.

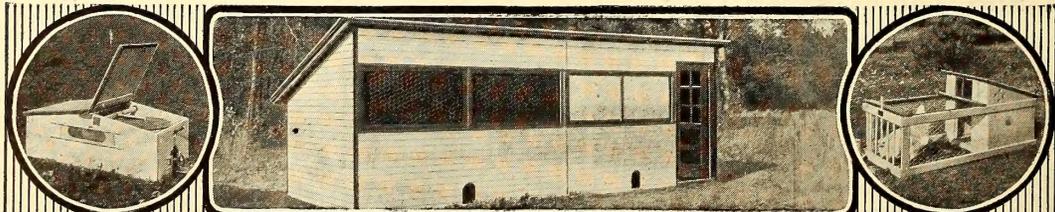
A NATURAL FERTILIZER

completely sterilized by a special high temperature direct heat process—weed seed, fungus or disease germs effectually destroyed—then screened and pulverized into the richest kind of natural fertilizer—packed in 100 lb. bags for convenient handling and shipment. Insist on WIZARD BRAND at your seed store or write for booklet and prices.



Give your gardens a chance to do their best! Prompt shipments—at moderate cost. Write to-day. **TRY IT THIS SPRING!**

The Pulverized Manure Co., 20 Union Stockyards, Chicago, Ill.



Brooder for 50 to 100 chicks

No. 3 Poultry House for 60 hens—2 units

Setting Coop

COMFORTABLE housing agrees with chickens as well as with people. Put your poultry in Hodgson Poultry Houses—they'll be comfortable and happy. These houses are well designed and well built—easy to ventilate and clean. You receive them in painted sections ready

to bolt together—without a skilled workman. Early ordering advisable—send for illustrated poultry catalog today.

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Pittsfield

8TH ANNUAL PRICE REDUCTION

Pure-Bred Day-Old Chicks

May brings chance to get Pittsfield strain at prices low as common chicks. More eggs and better hatches cut costs. Prices for each of five breeds, Rhode Island Reds, White Leghorns, Barred Rocks, White Rocks, White Wyandottes determined by date of shipment.

Write us number, breed, delivery date. We will reserve chicks. No money down. Pay just before shipment. Price list and poultry booklets sent on request. Safe delivery guaranteed.

PITTSFIELD POULTRY FARMS CO.
282 Main Street Holliston, Mass.

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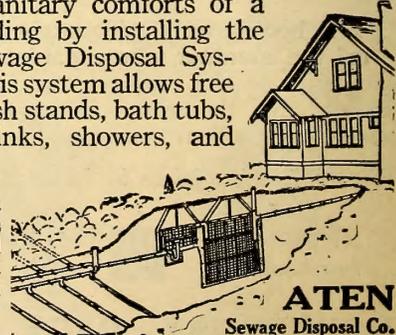
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Our New Rose for 1920—“*Madam Butterfly*”



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A lovely symphony of pink, apricot, and gold! A dainty, beautiful flower aptly named and one that will become a popular garden Rose, when better known. Very easy to grow, with lustrous, rich foliage, not affected by mildew or disease. We offer: TWO YEAR OLD, DORMANT PLANTS, FOR OUTDOOR PLANTING; \$2.50 per plant; \$25.00 dozen.

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12 distinct kinds which will include one of our

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The Gold Medal Winner. This Rose we introduced with the raiser, the E. G. Hill Co., in 1918 and it is being sold everywhere this year at \$1.50 per plant, which is also our own retail price on this variety.

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