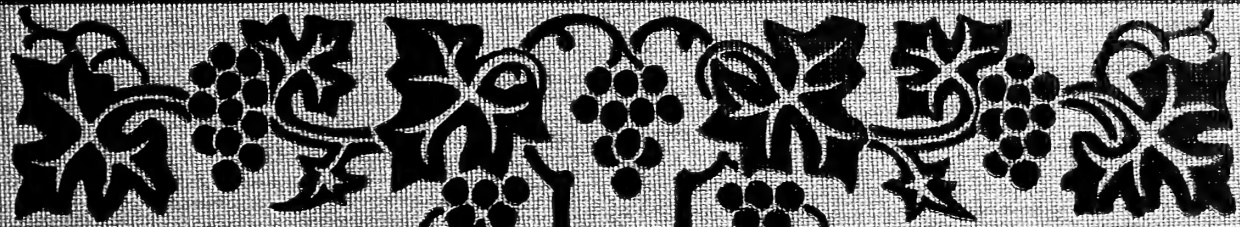


THE GARDEN MAGAZINE



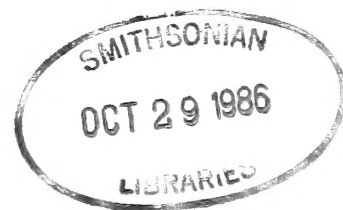


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THE GARDEN MAGAZINE

*Devoted to Planting and Managing the Grounds About the Home
and to the Cultivation of Fruits, Vegetables and Flowers*

Volume II
August, 1905, to January, 1906



NEW YORK
DOUBLEDAY, PAGE & COMPANY

1906

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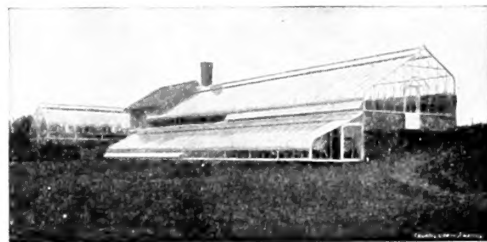
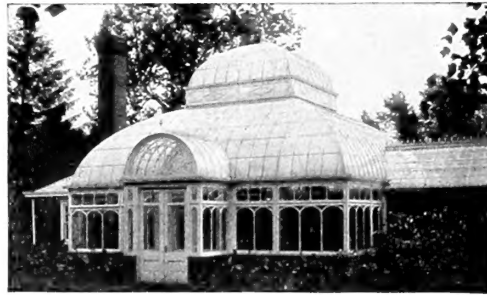
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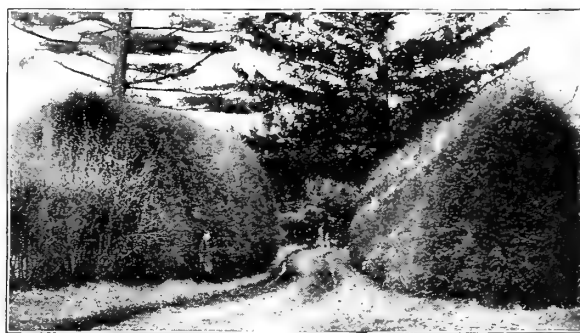
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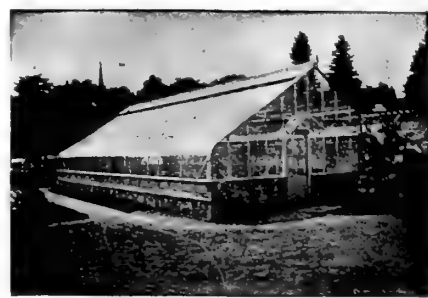


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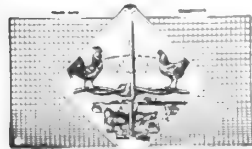
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DOUBLEDAY PAGE & CO NEW YORK

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Quantity Wanted	PEONIES	Each	Per doz.
....	Arthemise. Large flowers; lovely soft rose and salmon; very beautiful	\$1 00	\$....
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....	Blush White. A good variety, with blush flowers, turning white after opening	20	2 00
....	Caroline Allain. Beautiful blush, center sulphur, tipped white	30	3 00
....	Comte d'Osmond. White with sulphur center	30	3 00
....	Couronne d'Or (Golden Crown). Large, imbricated white flower, yellow reflex with stripes of carmine and golden stamens; extra fine	1 00	10 00
....	Delachii. Large, cup-shaped flower, deep amaranth, late-flowering; fine	35	3 50
....	Dr. Bretonneau (Verdict). Large globular flower; large rose petals and clear white; beautiful	40	4 00
....	Edulis alba. Large white flower, with some stains of carmine in the center; very pretty variety	35	3 50
....	Edulis superba. Very large flower of perfect shape; beautiful brilliant tinted violet, mixed with whitish ligules; silver reflex	60	6 00
....	Faust. Pretty anemone flower; color tender blue, center petals very narrow, flesh shaded with clear salmon; very handsome variety	40	4 00
....	Festiva maxima. Very large, pure white flower, with some blood-red stains in center; tall stalks, beautiful foliage, and very free-flowering. One of the very best white Peonies in cultivation	75	8 00
....	Formosa. Pretty convex flower; sulphur white, stigmatae lively red; very beautiful variety	35	3 50

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....	Grandiflora nivea. Very large, pure white flower, shaded with sulphur, lovely rose and salmon, with some stains of carmine; a variety of perfect loveliness	\$2 00	\$....
....	Lady Bramwell. Silvery rose, very fragrant	50	5 00
....	M. Dupont. Large, cup-shaped flower, perfect shape, sulphur white, carmine edge, extra	75	8 00
....	Mixed Varieties. This mixture is made up from varieties of which we have not sufficient to catalogue. It does not contain the best varieties, but the quality is extremely good for the low price quoted	Per 100, \$15 00	20 2 00
....	Mme. de Verneville. Very pretty anemone flowers, very full; collar of large petals, those of the center very close; carmine-white and sulphur, sometimes carmine; extra	1 00	10 00
....	Old Double Crimson. This fine old Peony is very effective when planted in masses; one of the earliest to bloom	Per 100, \$20 00	35 3 50
....	Phrynee. White, center light yellow, blotched red; extra	75	8 00
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....	Prince Imperial. Very large flowers; shining purple-scarlet. Very beautiful	50	5 00
....	R. H. Boggs. Crimson outer petals, with flesh-white center; distinct and fine	50	5 00
....	Solfaterre. Collar of large, pure white petals, those of the center narrow and sulphur-yellow. One of the best	1 00	....
....	Souvenir du Docteur Bretonneau. Large flowers in clusters, lively cerise-red, lightly shaded clear amaranth, golden stamens, brilliant coloring of grand effect	75	8 00
....	Tenuifolia. Same as following variety, but with beautiful single flowers	40	4 00

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....	Tenuifolia flore pleno. Deeply cut fringed foliage; flowers bright scarlet crimson; rare and fine	\$0 50	\$5 00
....	Triomphe de l'Exposition de Lille. Large, imbricated flowers, soft carmine-pink, with white reflex, carmine center; very fresh coloring	1 00	10 00
....	Triumphans. Fine large crimson	30	3 00
....	Whitley. White; large and sweet	35	3 50

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Quantity Wanted	PEONIES	Each	Per doz.
....	Agnes Mary Kelway. Light rose guard petals, yellow petaloids, with a rose tuft; extra fine. First-class Certificate, R. B. S.	\$1 00
....	Baroness Schroeder. Lovely flesh-pink. First-class Certificate, R. B. S.	2 00	....
....	Cyclops. Purple-crimson. First-class Certificate, R. B. S.	1 00	....
....	Duchess of Teck. An excellent variety, large and of good form, attractively colored, creamy white and bright pink. First-class Certificate, R. B. S.; Award of Merit, R. H. S.	2 00	....
....	Duke of Cambridge. A very handsome bright crimson flower; a superb variety; the very best of its color	2 00	....
....	Paderewski. Bright pink; very sweet-smelling. First-class Certificate, R. B. S.	2 00
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Quantity Wanted	PEONIES	Each	Per doz.	Per 100
....	Double and Semi-Double. In 25 varieties. These are really very choice and distinct from varieties grown in this country, and will give the greatest satisfaction	\$0 60	\$6 00	\$45 00
....	Single. In 25 varieties. The finest Single Peonies undoubtedly come from Japan. They are equal or superior to single sorts coming from Europe costing three times as much	70	7 50	55 00

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The GARDEN MAGAZINE

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AUGUST, 1905

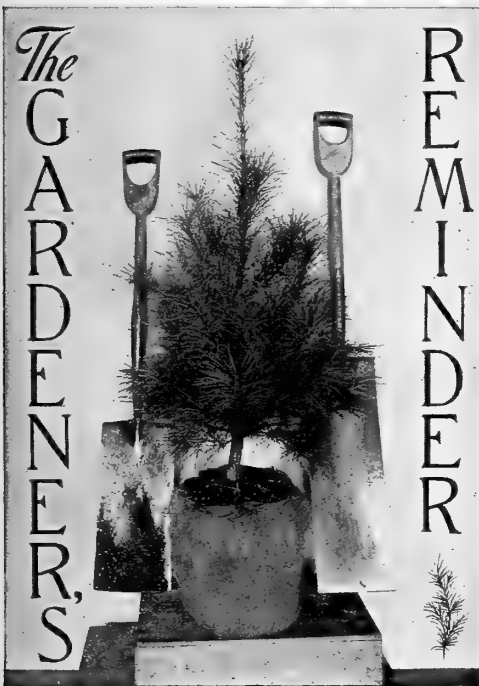
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Wilhelm Miller, Editor *Cover design by Henry Troth* *Doubleday, Page & Company, 133-137 East 16th St., New York*

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Why Evergreens in August?

ISN'T August a strange month in which to plant evergreens?

Not at all. It's quite the proper time! It is better than May because of the spring rush. It is better than September because the nurseryman is rushed then and we ought to be busy, too—planting bulbs and trees and getting ready for the winter.

Remember that evergreens are totally unlike deciduous trees in this respect: They are moved not in winter, but while the soil is warm and mellow, so that the roots can begin to work at once.

Any time during the growing season you can move evergreens provided you do two things: (1) Preserve a big ball of roots; (2) wrap a bag around the ball so that the air cannot dry out the roots, which are far more sensitive than those of deciduous trees.

Study evergreens now, pick out the best kinds, order them, plant them carefully the last week in August, and you will get the laugh on your friends who have a gardening thought once a year—in spring.

But don't plant evergreens in October!

THE NEXT MOST IMPORTANT THINGS

1. Send for midsummer catalogues and save a year on strawberries by planting potted strawberry plants.

2. The same catalogues will show you how you can have celery this fall, even if you planted none this spring.

SOW SEVENTEEN KINDS OF VEGETABLES

Early peas for September eating.

Bush beans which may mature in forty-five days.

Black-seeded Simpson lettuce—a heat resister.

Endive for fall salads.

Cucumbers for pickles.

Summer radishes or the Sakurajima.

Spinach for autumn greens.

Collards instead of spinach if too hot.

Corn salad for salad next March. (Cover outdoors in winter with litter.)

Salsify sown in August and left undisturbed till spring will be twice ordinary size.

Welsh onion, and use the leaves next March for seasoning.

Beets for autumn greens and winter roots.

Mustard—the Englishman's delight—ready to cook in twenty days.

Yellow turnips and rutabagas for winter. Extra early corn—on a chance.

If you want to make a delightful new acquaintance, sow tuberous or turnip-rooted chervil in August. The seeds lie dormant until next spring. The roots are boiled or eaten in stews, like carrots, but they have a different flavor. They will be ready to eat next August, but improve in flavor if left in the ground. Do not delay this until spring, because seeds kept dry over winter sprout poorly or not at all.

PREPARE FOR CHRISTMAS

Plant Bermuda lily bulbs for Christmas bloom in the greenhouse.

Sow primroses, calceolarias and cinerarias.

Take cuttings of heliotrope and geranium for the winter window garden.

Sow pansy and English daisy seed for April bloom in coldframes.

Sow seeds of Alpine and other rock-loving plants which are to be wintered in coldframes and planted out next spring in permanent positions.

HINTS TO THE HOUSEWIFE

Are you canning any peaches?

Have you any surplus of early apples?

The easiest way to have home-grown vegetables in November and December is to make a coldframe, and during the last week of August transplant into it young lettuce and spinach from the garden.

MISCELLANEOUS SUGGESTIONS

If you want to move a big deciduous tree "root prune" it now—i. e., dig a three-foot circle around it, then replace the earth, and by fall it will be accustomed to the change.

The early crop of celery will soon be nearly full grown. Then begin to blanch it.



How to tell a spruce from a fir—a thing everyone wants to know. Both are pyramidal trees

1. A typical fir or *Abies*. The needles of a young fir are flattened and appear to be in two ranks, while those of a spruce are spirally arranged. (*Abies homolepis*, a desirable but rare species)

2. A typical spruce or *Picea*. Spruce cones do not shed their scales; firs do. A Norway spruce (*P. excelsa*). (Make the right side of the picture the bottom and the cones hang naturally)

3. The Douglas spruce (*Pseudotsuga Douglasii*), which is neither a spruce nor a fir, though it has the seemingly two-ranked leaves and scale-shedding cones of a fir. Note the loose bristly cone

The Culture of Evergreens—By Thomas McAdam New Jersey

THE WHOLE STORY REDUCED! TO SIMPLE, COMMON-SENSE RULES, WITH THE REASONS THEREFOR, TOGETHER WITH A PLAIN STATEMENT OF COMMON METHODS THAT WILL SURELY CAUSE DISAPPOINTMENT AND LOSS

ABOUT all there is to tree culture is to plant the tree. Everybody ought to know how to do that, for a man isn't really a man until he has planted some trees. And the culture of evergreens differs from that of ordinary trees in only four important respects:

1. *Evergreens ought to be planted a month before summer drought or winter cold is due.*

This is because the roots of an evergreen have to supply the leaves with moisture every day in the year, and they have the best chance when the soil is warm and the conditions for growth favorable. But if you move an evergreen in winter the sunshine during the warm spells and the wind at any time are likely to dry out the leaves faster than the

frozen roots can supply the sap. Consequently they turn yellow and die.

2. *It is much more important to preserve a ball of roots with evergreens than with deciduous trees.*

You can drag up a deciduous tree with scant ceremony, cut back some of the branches to restore a fair proportion between



The three types of leaf that characterize conifers—all strikingly different from the leaf of a deciduous tree

4. The needle type, which is the commonest. This is the white pine (*Pinus Strobus*), readily told by its long tufts or brushes of needles, with five needles in a bundle

5. The scale type, formed by small closely overlapping leaves, making a fan-like spray like that of the arborvitae. White cedar (*Chamaecyparis sphaeroidea*, also called *Cupressus thuyoides*)

6. The awl type, which differs from the scale in being sharp pointed and not close to the branch. Yellow cedar (*Chamaecyparis Nutkaensis*), known to nurserymen as *Thuyopsis borealis*



Three types of "habit" among conifers—i.e., characteristic shapes of tree growth

7. The spherical type, assumed or approximated by many conifers when young and by a few at maturity. *Taxus cuspidata*, the best hardy yew

8. The columnar or cylindrical type, of which the Irish yew is the most familiar example. The Siberian arborvitae (*Thuja occidentalis*, var. *Wareana*)

9. The pyramidal type which most conifers assume in the juvenile stage. Firs and spruces usually make the most perfect pyramids. The Cilician fir (*Abies Cilicica*)

root and top, and the thing may grow for you, although you don't deserve it. But you don't want to cut back an evergreen. You can't cut it back enough to restore a decent balance without ruining its beauty. About all you can do is to cut out the leader, not the branches.

3. *Evergreens are far more sensitive than deciduous trees to drying out of the roots.*

This is because they have so much resinous sap in their roots, which quickly hardens on exposure to the air. Therefore, the ball of roots ought to be carefully wrapped in a bag until the moment of planting. Nurserymen always pack evergreens in bags with sphagnum moss to supply moisture to the

roots. Even if you are transplanting evergreens from the woods, or from a short distance on the home grounds, it will pay to "puddle" the roots or to put them in a wet canvas bag. Don't let the roots be exposed a second longer than is absolutely necessary. It is a crime to let a young evergreen lie around in the sun.

4. *The roots of evergreens must be trimmed with more care than those of a deciduous tree.*

Every good-sized root that is broken or ragged should have its end cut off square and clean. A ragged root is as dangerous as a ragged wound on your hand. It is bound to get full of dirt and germs.

Always mulch a conifer.—Put six or eight inches of straw or other litter at the foot of the tree, so as to keep all the moisture in the ground. Sun and wind evaporate it.

Never prune an evergreen.—There ought to be a law against the barbaric practice of trimming off the lower branches of evergreens so that they stand up like so many half-grown roosters. It is just as cruel to the tree to do this as to dock a horse's tail—and just as beautiful. Some nice people have horses with docked tails; only vulgar and ignorant people "trim up" trees. Besides, you lose the best part of the tree's value as a windbreak.

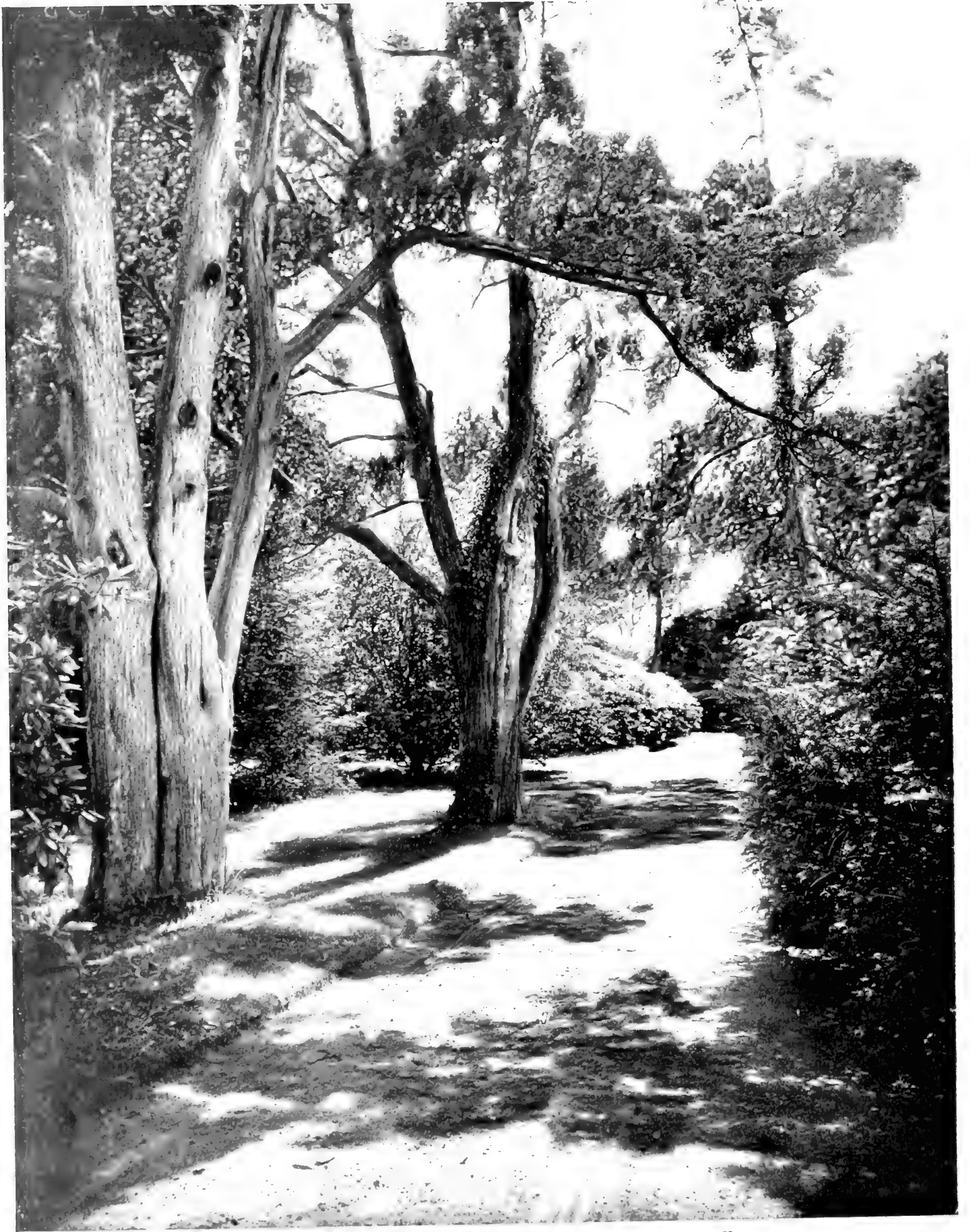


Three famous types of conifers which are not evergreen. They shed their leaves in the fall

10. The larch (*Larix*). Deciduous conifers have less value for windbreaks than evergreens, but their beauty in spring and fall is exceptional

11. The bald cypress (*Taxodium distichum*), also called deciduous, or swamp cypress. The "cypress" of lumber trade to-day. A Southern species, but hardy

12. The ginkgo (*Ginkgo biloba*), the only tree of any kind that has a leaf like a maidenhair fern. It has edible fruits, too, though nothing to brag of



13. THE PICTURESQUE BEAUTY OF AN OLD RED CEDAR (*Juniperus Virginiana*)

Evergreens for Every Place and Purpose

LISTS OF THE BEST KINDS RECOMMENDED FOR DIFFERENT PURPOSES IN ALL PARTS OF THE COUNTRY BY LEADING AMATEURS, BOTANISTS, NURSERYMEN, PARK SUPERINTENDENTS AND OTHERS INTERESTED IN CONIFERS

[Compiled from replies to circular letters sent to Messrs. W. R. Adams, P. J. Berckmans, John Dunbar, J. W. Duncan, T. D. Hatfield, J. T. Huss, J. Jensen, J. F. Johnston, H. J. Koehler, W. S. Manning, E. Mische, S. C. Moon, W. H. Moon, Oglesby Paul, J. W. Pettigrew, E. N. Reasoner, the United States Department of Agriculture (Division of Forestry), and others.]

While the Standard Latin names used throughout these lists present a formidable appearance, they are the only ones which it is safe to use in ordering what you want. The common names vary so much that nurserymen do not use them. For the English equivalents of these Latin names see page 42.

RAPID GROWING

LARGE TREES: *Pinus Strobus*. *Abies Nordmanniana*. *Picea excelsa*. *Pinus resinosa* and *sylvestris*. For the South: *Cedrus Deodara*, *Libocedrus decurrens*.

SMALL TREES: *Thuja occidentalis, orientalis* and var. *pyramidalis*. *Pinus rigida, densiflora*. *Picea pungens*. *Abies balsamea*.

SLOW GROWING

TREES: *Picea pungens* and *orientalis*. *Cedrus Atlantica*. *Taxus baccata*.

SHRUBS: *Juniperus Virginiana*, *Cephalotaxus Fortunei*, *Juniperus communis*, *Taxus Canadensis*, the *Chamaecyparis* family (*Retinosporas*).

SHORT LIVED

TREES: *Picea excelsa*. *Pinus sylvestris*. *Abies balsamea*.

ORNAMENTAL: *Juniperus communis*, var. *Hibernica*. *Cupressus macrocarpa*. *Chamaecyparis pisifera*, var. *squarrosa*. *Pinus Austriaca*.

THE HARDEST

TALL: *Picea pungens*. *Pinus ponderosa*, *Strobus, sylvestris*. *Abies concolor*. *Pseudotsuga Douglasii*. *Picea Engelmanni*.

DWARF: *Pinus montana*, var. *Mughus*. *Chamaecyparis (Retinospora)* in variety. *Picea nigra*, var. *Doumettii*.

FOR GIVING SHADE

GOOD: *Picea Canadensis* and *excelsa*. *Pinus sylvestris*, *Strobus* and *resinosa*.

BAD: *Thuja orientalis* and *occidentalis*. *Juniperus Virginiana*. All *Chamaecyparis*.

FOR SEASIDE GARDENS

TALL: *Pinus sylvestris, Austriaca, Strobus, Bungeana* and *rigida*.

DWARF: *Pinus montana*, var. *Mughus*. *Juniperus communis* and *Sabina*.

COAL-SMOKE RESISTERS

[Evergreen plants do not endure soft coal smoke. In cities such as Chicago and Pittsburg the conifers grow only in favored spots.]

Pinus Austriaca, montana, var. *Mughus*, and *sylvestris*. *Picea pungens*. *Taxus Canadensis*.

FOR HOUSE DECORATION

IN TUBS: *Chamaecyparis (Retinospora) pisifera, plumosa, aurea*, and *squarrosa*. *Pinus Strobus*, var. *brevifolia*, *Juniperus communis* and *Chinensis*. *Araucaria excelsa* (tender). *Thuja occidentalis* and *orientalis* in varieties.

IN WINDOW BOXES: *Thuja orientalis aurea*. *Chamaecyparis plumosa aurea*. *Juniperus* in variety.

FOR HEDGES

SHEAR SEVERELY: *Taxus cuspidata* and *baccata*. *Picea excelsa, Canadensis*, and *nigra*.

SHEAR LIGHTLY: *Thuja occidentalis*. *Chamaecyparis plumosa*.

BEST GLOBULAR

Thuja occidentalis globosa and vars. *Reidi, compacta, Hudsonica*, and *Hoveyi*. *Thuja orientalis compacta, Rosedale hybrid*. *Pinus montana*, var. *Mughus*.

DWARF, FOR EDGING

GOLDEN: *Chamaecyparis pisifera* var. *plumosa aurea* (when young). *Thuja orientalis*, var. *compacta aurea*. *Juniperus communis*, var. *Douglas Golden*.

GREEN: *Juniperus recurva*, var. *squamata, prostrata* and *Sabina*. *Chamaecyparis pisifera*, var. *plumosa*, var. *obtusa nana*. *Thuja orientalis*, var. *compacta*.

WOODLAND PLANTING ON LARGE SCALE

[Conifers in general should be planted as close as 5 x 5 feet each way]: *Pinus Strobus* and *resinosa*. *Tsuga Canadensis*. *Juniperus Canadensis* (in dry situations). *Picea excelsa*. In the South: *Pinus Thunbergi*. *Cryptomeria Japonica*.

ACCORDING TO SOIL

DRY: *Juniperus Virginiana*. *Chamaecyparis (Retinospora) obtusa*. *Pinus Strobus* and var. *brevifolia, montana*, var. *Mughus, divaricata, rigida, sylvestris, ponderosa, Banksiana* (under extreme conditions). *Juniperus Sabina, communis Alpina*. *Picea pungens*.

SWAMP AND MARSH: *Chamaecyparis thuyoides*. *Taxodium distichum*. *Juniperus Virginiana*, var. *Barbadensis*. *Larix laricina*. *Thuja occidentalis*. *Picea nigra*. The spruces grow in moist soils, though not exactly in swamps.

HEAVY: *Tsuga Canadensis*. *Picea excelsa, pungens, alba*. *Abies Nordmanniana, balsamea*. *Pinus Strobus*.

LIGHT: *Juniperus Virginiana*. *Pinus Strobus, rigida, ponderosa, Cembra, resinosa*. *Chamaecyparis spherioidea*.

SHALLOW: *Tsuga Canadensis*. *Juniperus Virginiana*. *Pinus Austriaca, sylvestris, divaricata, rigida, Banksiana*. *Thuja occidentalis*. *Picea excelsa, rubra*.

FOR EDGING IN FORMAL GARDENS

[The really good conifers are either not sufficiently dwarf, or they will not withstand severe clipping.]

GREEN FOLIAGE: *Thuja occidentalis*, var. *Little Gem, Tom Thumb* and *ericoides*. *Juniperus Japonica*. *Taxus tardiva*. *Chamaecyparis pisifera*, and vars. *plumosa, squarrosa*.

GOLDEN FOLIAGE: *Chamaecyparis pisifera*, var. *plumosa aurea*. *Juniperus Canadensis*, var. *aurea*.

BEST DWARFS TWO TO SIX FEET HIGH

GREEN: *Juniperus communis, Japonica* and *Sabina*. *Thuja occidentalis* and vars. *Little Gem* and *compacta*.

VARIEGATED: *Juniperus Japonica*, var. *alba spica, communis*, var. *Douglas's Golden*. *Taxus baccata aurea*, and other varieties.

BEST PROSTRATE

FOR ROCKERY OR GARDENS: *Juniperus Sabina*, var. *tamariscifolia, communis*, var. *alpina, communis prostrata, recurva*, var. *squarrosa*, and *Chinensis prostrata*. *Taxus Canadensis*.

SHRUBS AND SMALL TREES

FOR GARDEN SPECIMENS: *Picea orientalis, pungens*, var. *glauca, Englemanni*, and *Omorika*. *Juniperus Virginiana*, var. *glauca*. *Sciadopitys verticillata*.

FOR MASSING AT ENTRANCES

Pinus montana, var. *Mughus*. *Tsuga Canadensis macrophylla*. *Juniperus communis* and var. *aurea*, and others of prostrate habit. *Thuja occidentalis* in varieties—*Chamaecyparis* and *Taxus* of sorts, green and golden. *Picea excelsa*, and *pungens*, var. *glauca*. *Pinus Strobus*.

UPLAND AS OPPOSED TO MEADOW

TREES: *Pinus Strobus* and *rigida*, very good; *Austriaca*, and *sylvestris*, fair. *Picea nigra* and *alba*. *Juniperus Virginiana* (best). *Larix decidua*. *Abies concolor*.

SHRUBS: *Taxus baccata, cuspidata* (partial shade), *Canadensis*. *Chamaecyparis pisifera*. *Pinus montana*, var. *Mughus*. *Thuja occidentalis*. *Juniperus communis* and *Sabina*.

WIND-SWEPT TRACTS

TREES: *Juniperus Virginiana*. *Pinus rigida, Austriaca, Strobus*. *Picea excelsa*.

SHRUBS: *Chamaecyparis pisifera*, var. *obtusa nana*. *Picea alba*. *Pinus montana*, var. *Mughus*

WEeping OR PENDULOUS

Tsuga Canadensis, var. *pendula Sargentii*. *Taxodium distichum*, var. *pendula*, *Juniperus communis*, var. *oblonga*, var. *pendula*, *Picea excelsa*, var. *inverta*, *Chamaecyparis pisifera*, var. *obtusa pendula*.

COLUMNAR HABIT

Thuja occidentalis, var. *pyramidalis*. *Juniperus Virginiana* (when young). *Thuja gigantea*, var. *Lobbi*. *Taxus communis*, var. *Hibernica*. *Chamaecyparis Lawsoniana*, var. *erecta viridis*. *Cupressus sempervirens fastigiata* (for the South).

Evergreens for Windbreaks and Screens—By E. V. Warren Conn.

HOW TO MAKE A HOUSE COMFORTABLE IN WINTER, SAVE COAL, SCREEN ANY UNSIGHTLY OBJECTS, AND PROLONG THE FRESH VEGETABLE SEASON IN AUTUMN

Photographs by HENRY TROTH

WHOLLY aside from their beauty, evergreens are the most useful of all trees to the home planter, because they give the best protection from the winds in winter.



14. A screen which hides the unsightly object until the very moment you need to use it

Windbreaks often make all the difference between a house that is fit for merely summer occupation and one that is in all respects fit for a permanent home.



15. A bit of desolate prairie on Long Island which the merchant prince A. T. Stewart designed for a model city. It might have been had he planted evergreen windbreaks on this treeless plain

EVERYBODY NEEDS A WINDBREAK
People seem to think that windbreaks are only for the professional fruit-growers' orchards, whereas almost every home needs something of the kind. It is money in the pocket to plant evergreens; the saving in coal alone will often exceed in five years all that the trees have cost. Moreover, it is not necessary to wait ten years or even five years for evergreens to grow tall enough to shield the house, because new methods of transplanting big trees have made it possible to move evergreens 25 feet high at any time of the year. Theoretically, there is no limit to the size of evergreens that can be moved. Practically, it is only a question of expense and of whether the tree mover is competent.

The important fact is that thousands of people need evergreens who do not know it. Drive along any city or village street and notice how many offensive outbuildings there are. All these eyesores could be shut out from public, as well as from private view by evergreens. It is all well enough to gush about the beauty of evergreens, but their practical mission in this world is to save money, keep our families in better health, and hide from view atrocious outbuildings.

If you own a piece of country property that is destined to become suburban, the cheapest way to increase its value is to plant evergreens. Only the shrewdest real estate men know this. The reason why Garden City, Long Island, does not build up on the north side is simply that no one had foresight enough twenty years ago to plant evergreens on the wind-swept prairie.

HOW TO AVOID GLOOM AND MONOTONY

Nor is it necessary to have gloomy or monotonous evergreens, as many people seem to think. Often a little grove of trees near the dining-room window may serve a practical purpose, just as well as a long, distant avenue making a straight line, but not harmonizing with the landscape. Hold your hand near your face and you can shut out the sun. Line your driveway with Norway spruces and you may dampen the spirits of every guest who comes to visit you, and if the trees do not afford shelter from the prevailing winter wind you will neither save a ton of coal nor protect yourself from the nuisances that are sure to come into your neighborhood sooner or later. What we want is light and cheerful evergreens about our houses, not dark, heavy and dismal ones. In nearly every case, plant deciduous trees among the evergreens. Mixed plantings usually look better than either kind alone, because twice a year when deciduous trees are "doing things," evergreens give them the best possible background for their unfolding leaves or autumn colors. Evergreens alone generally look too sombre.

If, then, we are investing in evergreens primarily for comfort and privacy, and incidentally for their beauty, the most important and practical problem is how to find the best kinds for this special purpose. Does a tree preserve its lower limbs or does it let the wind whistle underneath? Can it endure the alternate freezing and thawing of winter as well as 30 or 40 degrees below zero? How high does it grow, and how



16. A pleasant contrast on the same Long Island prairie. A Cephalonian fir (*Abies Cephalonica*), not considered hardy above southern New York, is thriving because it is protected by a hedge of California privet which here holds its leaves a good part of the winter. It is typical of the many choice trees and shrubs of warmer climes that are hardy if protected from the winter wind by evergreen windbreaks

long must I wait before I get protection? Is it a long-lived or short-lived tree? What do I want for moist soil or dry soil, sand or clay? Must I trim this tree to keep it dense enough—if so, when and how? What is it worth to me in dollars and cents to have evergreens for comfort and privacy? Any trustworthy nurseryman in your neighborhood can answer all these questions for you, except what it is worth to you to have protection; and that is the most important question of all. You alone can answer that.

Never plant an evergreen tree by itself; sooner or later its limbs will get broken. Plant evergreens in groups for two reasons: if they stand shoulder to shoulder like sheep, they can resist winds. If they grow in groups their needles and the leaves of deciduous trees will carpet the ground and the moisture problem solves itself. Plant evergreens ten feet apart, and then be sure to thin them before they begin to compete with one another. Our forefathers neglected this, and that is one reason why their shelter belts look so ragged. If you start with trees three feet high, take out half of them at the end of six years and use them elsewhere or sell them for more than the whole windbreak has cost you up to that time. Let them stay, and they will reduce the value of the whole plantation.

SPECIES FOR EASTERN WINDBREAKS, BY
HENRY HICKS, NEW YORK

If one cares only for the beauty of conifers, the list of possible kinds of plants is bewildering in its number, but if comfort, privacy and permanence are essential, select from those species that are native to the northeastern United States. Moreover, that



17. The second best cheap, hardy evergreen hedge—American arborvitae (*Thuja occidentalis*). Its flat sprays are rather coarse and get monotonous and in winter the arborvitae is dull brown and dead looking

choice is still further simplified by the fact that the red and pitch pines and the red spruces are not handled by nurserymen to any extent and the juniper or ground cedar is not in the windbreak class, because it only grows five feet high. In practice it comes down to about this: The best windbreak of all is probably the white spruce, which preserves its lower limbs after bearing the brunt of winter gales for thirty years and more. The white pine is second choice and can be kept compact by trimming. For a high hedge, hemlock ranks first in beauty, being dark and rich in color, light and graceful in aspect. The arborvitae is the most available hedge plant at the nurseries, because it is easy to transplant. The best tall hedge in many sections is the red cedar; it stands dry and

variable climate and is available in large sizes. For formal gardens where a small symmetrical tree is wanted, or a tall spire like the cypress of Italian gardens, the red cedar fills all requirements. It is commonly regarded as impatient of being moved, but there is no trouble if the roots are taken with a good ball of soil. There is a natural tendency to shake out the roots, especially as the tree is narrow and makes no long roots. But if this is done, transplanting is necessarily a failure.

WINDBREAKS FOR THE PRAIRIE STATES
BY T. H. DOUGLAS, ILLINOIS

In many parts of the country, which are particularly exposed, as some regions of the Middle West for example, some kind of pro-



18. The most beautiful and satisfactory evergreen hedge, if we except the broad-leaved plants such as holly, which represent an entirely different type of beauty. The feathery spray of hemlock cannot be excelled and the plant has a lively green in winter. It must be trimmed yearly



19. The right and wrong way to trim a hedge. The vertical or broad-topped one at the left will eventually break down with its burden of snow. The sloping or narrow topped hedge at the right sheds the snow. The hedge at the left is weak at the base because the sun doesn't reach it; therefore the wind blows under

tection is required from the cold northwest winds and blizzards which so often blow at a terrific rate across the unbroken prairies. Nothing has yet been found to be the equal of a forest of deciduous trees or a belt of evergreens, and one row of the latter is as good as ten or twelve rows of deciduous trees.

Though the Scotch pine and Norway spruce are used more extensively than any other evergreen, they are not necessarily the best trees that could be used for the purpose. But they are the two fastest growing, also the cheapest, and hence the most popular. The Scotch pine fails much earlier than the Norway spruce. There are many Norway spruce windbreaks from twenty-five to forty years old that still retain their lower branches and seem good for as many more years. The Austrian pine is now being used in some sections, as it is a much longer-lived tree than the Scotch pine, although not as rapid a grower while young. The white and Douglas spruces are by far the best trees for

windbreaks in the Middle West; the former from central Iowa north, the latter from central Iowa south; the white spruce is very slow growing but very durable, holding its lower branches much longer than the Norway spruce. Trees over fifty-five years old in parts of Illinois show no signs of losing their lower branches. The Douglas spruce is as yet too expensive for general planting, but a much better tree in every way than the Norway spruce or Scotch pine. It is a rapid grower, having more the character of the hemlock than the spruce. The hemlock, which is such an admirable tree in the East, does not do well on the rich black soil of the prairies. The green form of the Colorado blue spruce is used extensively. It is a medium grower, stands crowding well, and owing to its stiff branches and sharp-pointed and strong needles, is both boy and dog proof. The blue form is far too expensive to be used for ordinary hedge planting. It is essentially a garden plant.

THE MERITS OF ARBORVITAE

The American arborvitae finds equal favor in the East and in the West for a shelter belt not to exceed 20 feet in height, especially on land that lies too low for spruces and pines. The American arborvitae has as its chief values quick growth, symmetrical shape and ease of propagation from seed or from cuttings. It is particularly well adapted to swampy lands. Its disadvantage is that after about thirty years it begins to get bare at the base. When grown in a nursery having a dry soil, the root system becomes modified and instead of a ball of numerous fibres, it develops a few long and coarse roots. Such trees are liable to die when transplanted.

A good windbreak will protect, in an ordinary wind, from eight to twelve times its height, as is easily seen after a snow storm, the snow lying level for this distance, often eight to thirty inches deep, while beyond the protecting influence of a hedge the ground is bare in spots, with high drifts in other places.

MAKING A HEDGE

A good hedge must be grown as a crop. As it is to stand for an indefinite term of years, the ground should be prepared even more thoroughly than for ordinary planting. A live hedge's chief attraction—and it never fails to attract greatly—lies in evident, rich, vigorous growth. This means plenty of soil. Therefore cultivate the ground for a width of six feet before the plants are set out. It is better to plant in the single row than in the double row because it is easier to keep down the weeds. If evergreens are planted in double rows for windbreak purposes, a space of twenty feet or even more must be left between the rows, because, planted closer than twenty feet, they will crowd each other as they grow. Result: inner side of each row will die out.

PROPER DISTANCE FOR PLANTING

The large-growing trees, such as hemlock, all the ordinary pines, spruces, etc., may be set five feet apart. For ornamental hedges in gardens where *Retinosporas* and similar small-growing plants are used, about two feet will be ample space to leave. Avoid close planting



20. The winter beauty of a hemlock hedge



21. A nearer view, showing the hemlock sprays



22. The dull, unimaginative way, as old as the hills—an avenue of black evergreens making an unnatural line in the landscape and too violent a contrast with the snow. Norway spruce, one of the most dismal trees when planted alone or in lines. Lighter colored evergreens are more cheery

unless for immediate effect and with the purpose to remove alternate plants as soon as they touch. If planted too closely, some gaps will occur through the death of the overcrowded specimens.

The native hemlock makes as pretty a hedge as can be desired, its young feathery growth having a beauty all its own. In planting, start with young stock and set them about two feet apart (or less) and cut out the leaders to insure branching. After the first year, trim the side shoots too, allowing a little growth each season until the desired height is attained.

KEEPING WITHIN BOUNDS

There is no mystery about pruning a hedge; while it is still growing and is being shaped, prune or shear just before growth

begins, that is, in March or April. Afterward pruning may be done in June. Never shear an evergreen hedge in autumn or winter, or you will be writing to THE GARDEN MAGAZINE to know why your hedge is dying.

The shape of the hedge is all important. There are two admissible ways, variations of the same general type: Wide at the base and coming to a narrow top so that the section is triangular; or with the sides either straight or slightly bulged—with the preference for the latter. Nothing can look worse than a hedge with a hollow base. A flat-topped hedge holds the snow on it in winter time and is likely to be broken down; a hedge should shed the snow; besides, it cuts off sunlight from the bottom. After it has become well formed prune or shear it once a year—in June.

As a purely formal hedge, nothing exceeds the box, but its slow growth is sometimes a drawback, and unfortunately it is not certain to grow in all places. The most popular hedge plant to-day (almost an evergreen) is the California privet (*Ligustrum ovalifolium*). Its leaves endure until the turn of the year at least, and it is the quickest-growing plant and most easily managed that we have. On the other hand, it is not really hardy above ground in hard winters like that of 1904-05.

In New England, experience shows that the Scotch and Austrian pines are inferior to the white pine as windbreaks when they are well developed, although the latter breaks at twenty to forty years of age. The best resister of ice in that section appears to be *Pinus Cembra*, and the Norway spruce also comes through well.



23. The simple, natural tasteful, and permanent way of planting evergreens. When grouped or massed, trees of any kind protect one another. Small Austrian pines planted closely to establish forest conditions on a gentleman's estate. His hillside will be a grand sight before he dies. This is one of the best things men of wealth can do. When these trees establish forest conditions they will shoot up quickly. Meanwhile they are a joy to look at

The Broad-Leaved Evergreens—By Leonard Barron New York

A GROUP UPON WHICH FORTUNES ARE SQUANDERED IN IGNORANT VIOLATION OF NATURE'S LAWS—THE GORGEOUS FLOWERED RHODODENDRONS, AZALEAS AND LAUREL—BOX THE MOST FAMOUS HEDGE PLANT FOR FORMAL GARDENS—HOW TO GROW HOLLY WITH BERRIES ON IT IN THE NORTH

Photographs by HENRY TROTH

THERE is one plant which even a hardened oil magnate knows and appreciates—viz., a rhododendron. Small wonder that every millionaire wants to own a hillside and



24. The arching sprays of this Southern evergreen (*Leucothoe catesbaei*) are now used for Christmas decorations. The shrub is fairly hardy in New England. Excellent ground cover for rhododendrons

cover it with rhododendrons, for they are the most gorgeous flowering hardy shrubs the world has ever known. They have no fragrance or sentiment, as a rose has; the individual flowers are only an inch and a half across, and the clusters may contain less than a dozen blossoms, but when you get a solid bank, five feet high and fifteen across, of rhododendron flowers set off by their thick, waxy, lustrous, dark-green, immortal-looking foliage, it needs only one look to understand why people plant them in such quantities—by the carload!

But alas! they perish by the carload, too. And one of the cruellest things a man can do is to drag up rhododendrons, azaleas or laurel from the woods, transplant them with no more care than a deciduous shrub receives, put them in full sunlight and watch them sicken and die. All these broad-leaved evergreens are slow growers, shade lovers, haters of stagnant moisture, extremely sensitive to drought, and sure to suffer if they are exposed to full sunshine during sudden warm spells in winter.

Every green leaf is always transpiring in the presence of sunlight, and the broad-leaved evergreens present an enormous evaporating surface in winter when deciduous trees and shrubs have none at all. Consequently, if the sun strikes these broad-leaved evergreens during a thaw in winter, the leaves have to transpire as usual, but the roots, being frozen, cannot supply moisture to the leaves as fast as they need it to replace what they are giving. That is the chief reason why rhododendrons perish miserably by the thousand, and the remedy is found in the following rules:

1. Plant broad-leaved evergreens in a partially shaded position, where they will be protected from winter winds and sunshine.

2. Prepare the soil with greater thoroughness than you have ever given to soil before.
3. Give perfect drainage and remove four feet of soil, if it has lime in it.
4. Mulch with a foot of litter summer and winter, for the evergreens are usually surface feeders and always sensitive to drought.

CRUCIAL POINTS IN CULTIVATION

The ideal cultural conditions for all evergreens are these: A light, rich loam—one having for nearly a third of its bulk well-ripened leaf mold, or very thoroughly rotted manure. There should be two feet of this mixture—not less; more will be better. One of the most successful rhododendron beds I have seen was dug out to a depth of four feet and suitable soil replaced. If more people gave attention to this preliminary detail there would be better gardens and less heart-burning over money “just thrown away.” Partial shade from loose growing deciduous trees or shrubs, when not planted in a position naturally sheltered, is essential.

None of these evergreens thrive at points far inland. In the Middle States they do not grow at all, nor will they endure large quantities of soft-coal smoke. The best-known broad-leaved evergreen tree is the bay, or laurel of the poets (*Laurus nobilis*), which is annually imported by the thousand from European nurseries for use in formal gardens, on terraces and about vestibules. Trained in artificial forms, these trees are rather of the architectural features than of the garden proper and need to be protected in a cellar during winter, together with the large-leaved aloes.

HARD FACTS ABOUT RHODODENDRONS

Gathering *Rhododendron maximum* from the woods for planting in gardens is now a recognized industry. The plant is dug up and shipped by the carload. It is hardy all through the Eastern and New England States. It has narrow, oblong leaves, whitish beneath, and the flowers are rose colored, lightly spotted with green inside, and appear



25. Rhododendrons have the showiest flowers of all broad-leaved evergreens. They also make the stateliest plants. In winter the leaves curl and uncurl, according to the degree of cold. Note the fat winter buds. Rhododendrons need partial shade. Avoid lime, clay and stagnant water (*R. Catawbiense*)

in June and July. There is also a variety with white flowers. It is a taller-growing plant than the *R. Catawbiense*, also native, which is hardy as far north as New England. This species grows six feet high and has lilac flowers in June; more oval leaves rounded at the base and glaucous beneath. The hybrids of the nursery trade are crosses from these mixed with the Indian *R. ponticum*, a tender species which is used as a stock on which the hybrids are grafted. That is one reason why they sometimes fail.

The hybrids have more showy flowers than the native species, but are hard to grow, unless the varieties are carefully selected and properly planted. If you can give them four parts of rich loam, porous and moist, but not wet, can plant them so that the drying winds of winter are cut off, and are willing to spend money in the cause of horticulture, why, buy all the European hybrids that are offered, and learn by experience. Then tell others and save their pocketbooks.

If you want sure results, north of the lower Alleghany range, plant hybrids having *R. Catawbiense* as one parent. These are recognized by the more oval leaf, rounded at each end, and by the yellow bark of the branches. The foreign *R. Ponticum* is used as a stock in the European nurseries for the almost equally tender hybrids. Some day perhaps we shall get them on hardy stock.

Here are four hardy hybrids of distinct colors which may safely be planted: Gloriosa, bluish white; Caractacus, crimson; Album elegans, white (tall growing); Everestianum, rosy lilac (compact habit, excellent for a single specimen on lawn). Do not mix the colors.

The beautiful low-growing *Leucothoe Ca-*

tesbai, the arching sprays of which are now familiar decorative material at Christmas, is fairly hardy in New England, though a native of the South. Its foliage becomes almost claret red in winter.

EVERGREEN SHRUBS WITH SHOWY FLOWERS

Lily-of-the-valley tree	<i>Andromeda floribunda</i>
Evergreen thorn	<i>Crataegus Pyracantha</i>
Hardy rhododendron	<i>Rhododendron Catawbiense</i> , <i>R. maximum</i> and hybrids of these two
Bright-flowered azalea	<i>Azalea amœna</i>
Mountain laurel	<i>Kalmia latifolia</i>
Garland flower	<i>Daphne Cneorum</i>

The evergreen thorn, showy in its mantle of white flowers in June, and one of the best berried shrubs for winter, can be grown on a trellis and the long sprays cut as substitutes for holly. The fruits are rich orange red and so profuse that you can cut whole yards of golden berries at Christmas—if the birds are kept off! It is not reliably hardy north of New York.

I would plant the dwarf *Azalea amœna* for hedges inside the garden and about the house. It is a pity that its variety, Kaempferi, the more hardy one for New England gardens, is not yet offered by nurserymen.

EVERGREEN SHRUBS FOR FOLIAGE

Box	<i>Buxus sempervirens</i>
Mahonia	<i>Mahonia aquifolium</i>
False holly	<i>Osmanthus aquifolium</i>
American holly	<i>Ilex opaca</i>
Japan spindle tree	<i>Euonymus Japonicus</i>

Every gardener knows the box hedges of the old-fashioned garden, and everyone wants to possess them. They can be had by the most careful transplanting, but cannot even then be relied upon to live in the new

place. The box is not hardy in all parts of the Eastern States. If you live near the sea you may try a box hedge of small plants—they may be big in the year 2000. Otherwise, if you have the money, buy old plants and have them moved with care. For most people the Japan holly (*Ilex crenata*) will be as satisfactory.

The mahonias have bold, holly-like leaves and yellow flowers, which are followed by purple glaucous berries. They get burned in some places, but are good if kept down low as hedges. Tall plants are "scraggy." They do best if sheltered or given artificial protection in winter.

The osmanthus looks like holly, and has at times been sold as holly, but it has opposite leaves, and no reader of THE GARDEN MAGAZINE should be caught by the trick. It makes a good specimen plant, growing compactly, but is not hardy.

Train *Euonymus Japonicus* on a pillar and you will be pleased if you live near the sea, but select a shaded, protected spot.

HOLLIES THAT ARE HARDY

There is but one broad-leaved hardy evergreen that makes a tall tree in the Northeastern states—our native American holly (*Ilex opaca*). Few people know the secret of its culture. The leaves must be stripped off at planting time. Enough trees must be planted so that there will be some staminate and some pistillate in order to set berries. There is no way of telling the two apart before they flower. Holly will never grow as high in the North as in the South, but there is a specimen at Mr. James Wood's home, Mount Kisco, N. Y., which bears berries that last until May.



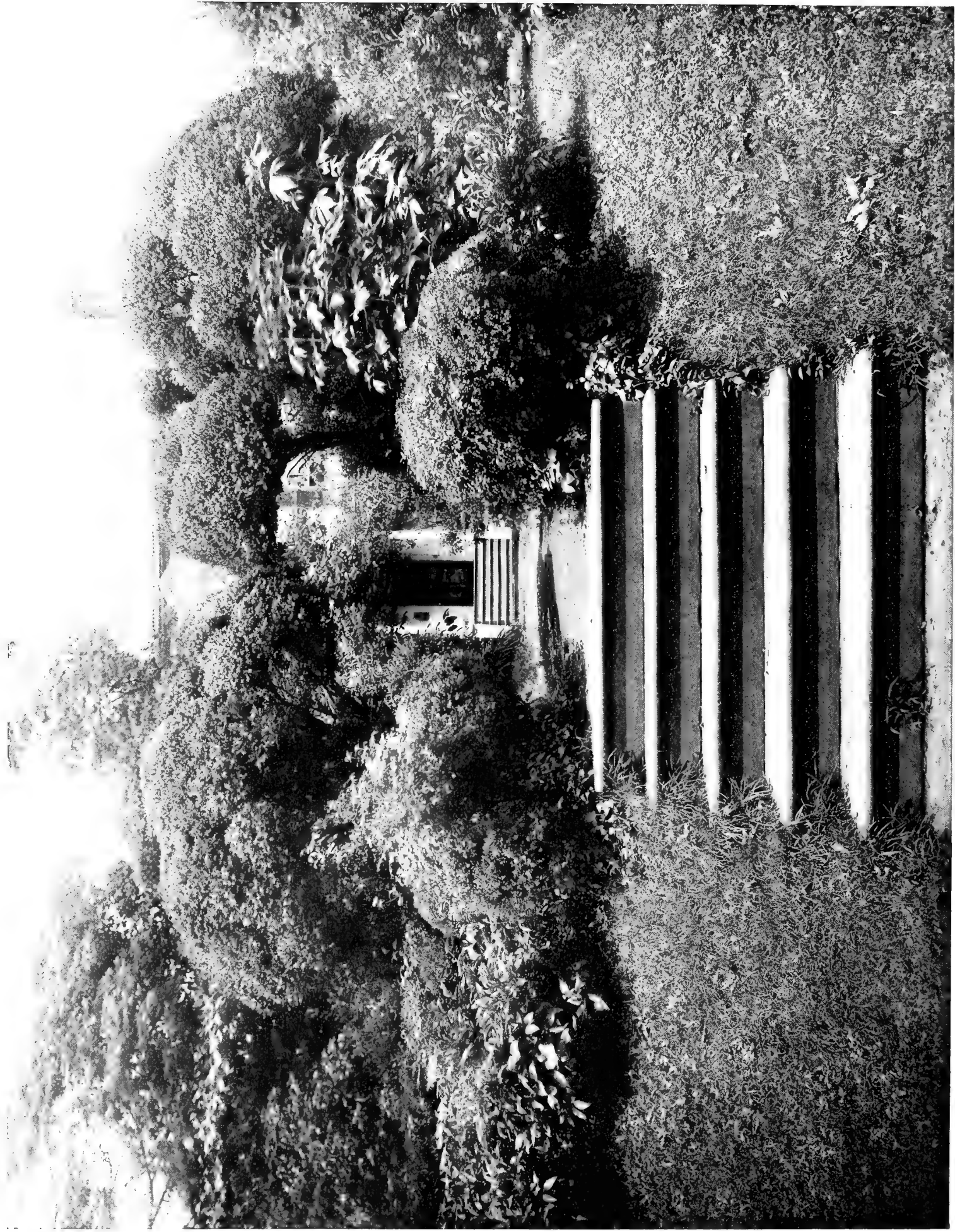
26. Mahonias have the yellow flowers of a barberry and holly-like foliage. In the sunlight and wherever hardy, leaves assume the richest tones of red and bronze in winter (*Berberis Japonica*)



27. The only hardy evergreen plant that carpets the ground and bears bright-red berries lasting all winter and until June. Partridge berry (*Mitchella repens*). Don't rob the woods; buy from nurserymen



28. Holly (*Ilex opaca*) about twenty feet high at Trenton, N. J. Grows ten feet high in New England if protected from bursts of sunshine in winter. Strip off all leaves at planting time. That's the secret



29. THE SPLENDID PAIR OF BOX TREES AT THE PRINCE PLACE, FLUSHING, LONG ISLAND

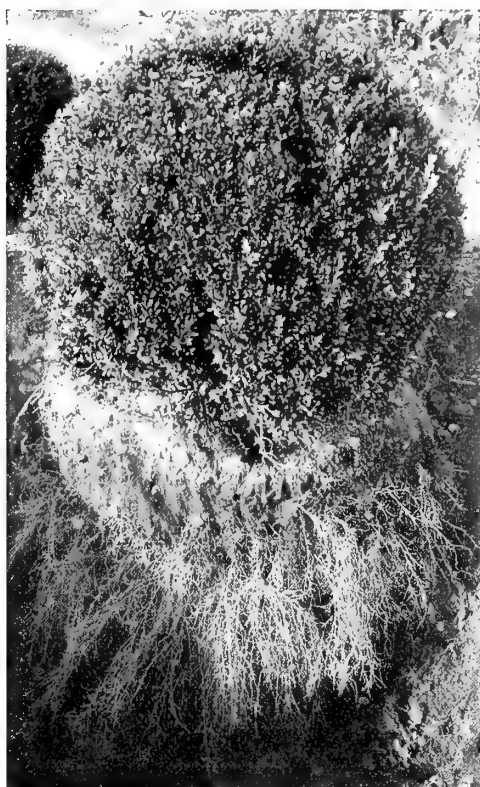
Two other hollies worth growing are: *Ilex crenata*, doubtfully hardy north of New York, which can be used for hedges like box, which it much resembles in general effect, but it grows up in less time; and inkberry (*I. glabra*), which is the one evergreen shrub for the North that will stand exposure to sun.

THE SOUTHERN WEALTH

Go to the South for luxury in evergreen growth! It would take our whole number of THE GARDEN MAGAZINE to tell of them. Fewer conifers flourish than in the colder North. Magnolias, rhododendrons, Indian azaleas, Japanese barberries, all the box varieties, grow there. Camellias grow to trees, and vie with the magnolias in their showy display. There are gardenias, almost sickening in their fragrance, *Eleagnus Japonicus* in many varieties, privets, myrtles, olive, and tea. Relieved of the trying winter conditions that make it practically impossible to grow the favorite evergreens of England in the North, the laurel and holly both flourish in Southern sections.

TRAILING AND UNDERGROWTH EVERGREENS

- | | |
|------------------------------|---|
| English ivy | <i>Hedera Helix</i> |
| Trailing euonymus | <i>Euonymus radicans</i> |
| Periwinkle or running myrtle | <i>Vinca minor</i> |
| Partridge berry | <i>Mitchella repens</i> |
| Mountain spurge | <i>Pachysandra terminalis</i> |
| Hall's honeysuckle | <i>Lonicera Japonica</i> , var. <i>Halliana</i> |



30. Box ready to move. The big point in moving any tree or shrub is to preserve the fine or feeding roots. It is only by special treatment, begun before the moving is to be done, that so many roots as these may be secured

As a ground cover under trees nothing is better than the trailing myrtle, which has waxy, dark-green foliage and blue five-lobed flowers about an inch across. English ivy is not to be relied upon north of Philadelphia. It never should be planted on an east or south exposure. Under the shelter of tall trees English ivy will sometimes grow tolerably well as far north as Massachusetts, but generally it ekes out a precarious existence all through New England.

The best evergreen vine for the porch is Hall's honeysuckle. It is excellent for rough carpeting in exposed knolls and for drapery on the face of a wall or rocky cut. It will crowd out nearly everything else that grows, and in the more trimly kept portions of the garden may become somewhat of a nuisance if allowed full freedom of growth.

The mountain spurge (*Pachysandra*) is a welcome cover plant. Thriving equally in the shade or exposed to sun and in any ordinary soil, its thick, bright-green leaves, always fresh looking, make it a valuable plant for the amateur. It makes a carpet about six inches above the ground. Like the trailing myrtle, it solves the cover problem under trees and shrubs where nothing—hardy weeds even—will grow.

If you want a shiny green carpet varied with red berries that will last all winter, plant the partridge berry. It can be collected from the woods and also bought from nurserymen.



31. Box the ideal broad-leaved evergreen for English formal gardens, but precariously hardy in the northeastern United States, where the erratic winter killing of grand old specimens has caused much heartbreak and the loss of many thousands of dollars. A specimen like this is worth fifty dollars or more

Some Interesting Small Conifers—By J. T. Withers New Jersey

TREES FOR SMALL GARDENS, CITY LOTS AND FOR MASSING IN BEDS—EVERGREENS THAT CAN BE PLANTED ON NARROW ROADSIDE CUTS AND ON ROCKY FACES—QUAINT, SMALL SHRUBS FOR THE LAWN

Photographs by HENRY TROTH

IN a very small garden even one specimen of such a tall-growing tree as the hemlock or the Norway spruce might be overwhelmingly disproportionate. In suburban gardens of somewhat larger size, where the house is placed at an appreciable distance back from

diminishing in size as they are distant from the house and nearer the street.

Fortunately, among the conifers there are plenty of small-growing trees that seem to be just made for confined situations, and which reproduce on a small scale the effects of the larger evergreens.

I have seen the country effect brought right into the heart of even New York City by the planting of a few low-growing evergreen shrubs (the Mugho pine) where there was no room for the taller and more spreading trees. The small city, or the suburban garden which is practically an actual apartment of the house, needs furnishing for comfort and beauty with as much care as is usually given to the inside rooms. Abruptness should be avoided in both, and so far as the garden is concerned, evergreens offer us the only means of accomplishing this end.

MAKING THE GARDEN LOOK BIG

Plant the dark green junipers, yews and Japan cypress in the more distant beds, to give as much apparent dimension as possible. Plant yellow-foliaged varieties in places where foreshortening is not objectionable, or use them only as accents or sentinels to mark the main lines of composition.

On small lawns, where there is no opportunity for an apparent increase of dimensions, small evergreens planted in beds give infinitely more pleasure and far less trouble than annually replanting such gaudy things as scarlet geraniums and golden-leaved coleus. A few of these may be well enough, but not whole beds. Moreover, with a background of evergreen foliage a few of these highly colored objects really show to better advantage.

WHAT TO PLANT

Don't buy the tender fancy evergreens that the English garden books tell about unless you are sure of proper protection. While the Irish yew and Lawson's cypress are unequaled for columnar effect, they are not hardy in exposed places in New England. The best small evergreens for all purposes, either as specimens or in masses, are the Retinosporas. For a single specimen plant, the Japanese umbrella pine (*Sciadopitys verticillata*) is not easily equaled, and it stands the New England winter.

For banks, and at entrances where a permanent evergreen effect is wanted, and yet where there is a little space, the dwarf mountain pine (*Pinus montana*, var. *Mughus*)



32. Trailing yew, which sometimes forms a mat fifteen feet broad and less than two feet high. It has bright-red berries and will grow in damp shady places (*Taxus Canadensis*). Sometimes called ground hemlock

the street, and the approach is by a driveway winding through or around a lawn, there is room for a different treatment. Plant a few individual trees of the larger dimensions, either open or in masses, according to the general scheme of the place, gradually



33. A natural arbor for the children. The Japanese red pine (*Pinus densiflora*), noted for its picturesque habit when old and its numerous horticultural varieties



34. The Japanese dwarf cypress, an odd little conifer which looks as if it were contorted by heavy winds. No two alike. Used in rock gardens on sea cliffs and wherever a small weird dark-green plant is desired. Nursery name, *Retinospora obtusa nana*

will always be satisfactory, and it is certainly one of the very best of all conifers for a smoky city. It has a naturally dingy green color which seems most at home in dull or even dirty surroundings.

Another plant for banks, and one that can be used in combination with that just named, is the wild yew or ground hemlock (*Taxus Canadensis*), common in the woods as an undergrowth shrub, where its lively green, and red berries, show up to great advantage. Its perfect hardiness makes it unusually valuable in the colder regions. It can be transplanted with the greatest ease when young and comes easily from seed, but is best propagated by cuttings of hard wood taken in winter—January or February. These, put in a temperature of 50 to 60 degrees, will root in about two months.

What beauties the Japanese cypresses, the *Retinosporas* of the nursery, are, too, for our small garden! The obtusa type is especially important for its quaintness. It takes years to grow to a moderate size and can be used for formal effects, although it has a certain freedom of habit. There are plenty of others of the family which are well known to all who delve in gardens.



37. A dwarf variety of the white pine (*Pinus Strobus*, var. *brevifolia*). Known to nurserymen as *P. Strobus*, var. *nana* or *pygmaea*. Remarkable for its dwarf, compact, round head and short leaves

As a perfect little tree the dwarf white pine or Jersey pine (*Pinus Strobus*, var. *brevifolia*) commends itself especially for a soil that has a tendency toward clay, although it does well in sandy loam. It grows rapidly up to about six feet, which is its natural height. Larger in its spread, and especially adapted to a moderately large garden, is the Japanese *Pinus densiflora*—a tree all too lightly appreciated. Its rugged habit and its very informality when mature give it a special charm that is all its own.

A little way south (Philadelphia is its northern limit of hardiness, unless in a very well-sheltered situation), the charming *Thuyopsis dolobrata* can be grown. It is the most beautiful of all the arborvitæ type, but has its limitations on account of its more delicate constitution.



35. A dwarf Norway spruce, out of which rises a tall dark mass which is clearly a reversion to the typical form. This is not a case of suckering (growth from the stock of a grafted plant)

Both the Norway spruce and the native hemlock have given endless numbers of dwarfs. Wherever there are natural growths of the hemlock one is almost sure to find an



38. This tree (*Thuyopsis dolobrata*) is probably the most beautiful conifer of the arborvitæ type. Reasonably hardy in Massachusetts, but suffers from summer drought. Needs shelter, shade, cool air, moist soil



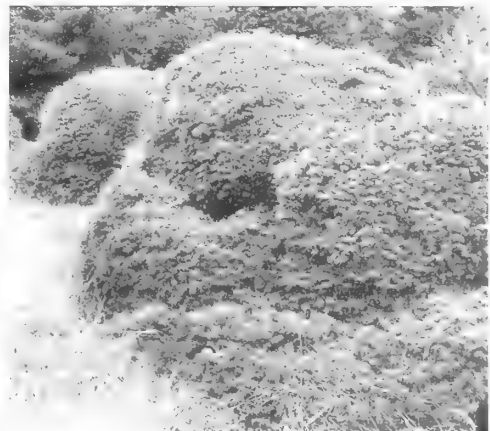
36. The commonest dwarf pine, a variety of the Swiss mountain pine (*Pinus Montana*, var. *Mughus*). An excellent cover for road banks, terraces and hillsides. A compact button usually twice as wide as high

abundance of these "sports," many of which are grown in nurseries and offered for sale under various fancy names.

The hardiest and dwarfest shrubs are: *Thuja occidentalis*, vars. *globosa*, *compacta* and *Hoveyi*, all varieties of the arborvitæ, and there are many others grown in nurseries varying a little in habit of growth. Better go to the nursery and pick out the ones you fancy most. None of those named grow more than six feet in height, and can be kept smaller by shearing in early summer.

For variegated (golden) foliage not more than six feet high: *Juniperus communis*, var. *Douglas Golden*; *Taxus baccata*, vars. *aurea* and *Washingtoniana*, and the golden arborvitæ, George Peabody (*Thuja occidentalis*, var. *lutea*).

On rocks, on steep banks and in shrubbery foreground, plant the junipers—any number available—which can be seen in a nursery. Here are some to inquire about: *Juniperus Sabina*, *J. prostrata*, *J. communis prostrata*, *J. Chinensis prostrata*. All these are perfectly hardy, grow easily from seed, and the amateur can easily increase his stock by sowing in the garden border in fall (the seeds, however, take two years to ripen on the plant), giving a slight protection over winter by a mulch of leaves or evergreen branches. Although a little more labor, the quickest way to get a stock of these is from cuttings taken in winter and put in sand in 50-60 degrees.



39. The silver fir and Norway spruce have many dwarf varieties with erect, pendulous or abbreviated branches. This is *Picea excelsa*, var. *pygmaea*. At Dosoris, Long Island. Estate of Mr. Dana

All the Spruces Worth Cultivating—By John F. Johnston Glen Cove, Long Island

SPRUCES ANYBODY CAN GROW AND SPRUCES FOR CONNOISSEURS ONLY—VIVID PEN PICTURES OF THE IMPORTANT KINDS, SHOWING THE PECULIAR BEAUTY OF EACH AND WHAT INDUCEMENT THERE IS TO GROW IT

Photographs by HENRY TROTH and H. E. ANGELL

[EDITORIAL NOTE—This is the second article in the series of "Little Monographs" written by specialists for the expert gardener, whether amateur or professional, and designed to bring our knowledge of each subject up to date.

These articles present a new type of horticultural literature, in which the point of view is primarily human and horticultural, not dry-as-dust botanical. The old-style "alphabetical monograph" merely *describes* species; it does not *distinguish* them. This new department will do both, and hopes to be interesting and practical also. The new plan combines the convenience of the alphabetical index (wherever the group is large enough to justify an index) with the accuracy of the "key," which alone can give one a grasp of the whole genus in the shortest possible time.

Mr. Johnston is gardener to Mr. Paul Dana, whose estate "Dosoris," founded by the late Charles A. Dana, editor of the New York *Sun*, contains the best private collection of conifers in the vicinity of New York City.]

SPRUCES and firs form a large natural group, the members of which are noted for the symmetry of their pyramidal growth. Most people cannot tell a spruce from a fir,



40. A weeping spruce. Most people make the mistake of putting such striking objects in conspicuous positions, instead of secluding them. *Picea excelsa*, var. *irberta*

and even the scientific names *Picea* and *Abies* are often exactly transposed by nurserymen. As a rule, the branches of a spruce are less stiffly horizontal than those of a fir; the branchlets more drooping, and the needles seem to lie in two ranks instead of being spirally arranged. For these reasons spruces usually have more of loose, pendulous grace, while the beauty of firs is generally of the stiff, precise, military character.

Run your hand along the bare branch of a spruce; it feels rough, while that of fir is smooth. The reason for this is that when the old leaves of a spruce drop off, a small footstalk remains attached to the branch, whereas in a fir there remains a slight depression or small circular disk.

Of course the surest way to tell them apart is by the cones, which, however, may not be borne until a tree is ten years old or more. A spruce cone stands up at first, but later hangs down, and after scattering its seed, the whole thing falls to the ground without shedding any of its scales; whereas a fir cone always remains erect, and its scales are shed one by one, leaving the core or axis of the cone standing for a time.

THE MOST POPULAR SPRUCE—THE NORWAY

Undoubtedly, the most popular hardy spruce is the Norway spruce (*Picea excelsa*).

It is probably more planted than any other conifer. This is because of its cheapness, rapid growth and ease of propagation. It is the commonest evergreen for windbreaks; but the white spruce, though costlier and harder to get from nurserymen, is probably a better tree for this purpose, since it seems more likely to preserve its lowest branches. (A windbreak loses much of its effectiveness if the cold wind has a chance to sweep along the ground.) Like every popular idol, the Norway spruce has its limitations, which are not usually stated by its enthusiastic friends. It is one of the blackest conifers. Long



41. Alcock's spruce, even more brilliantly blue than the Colorado blue spruce when the under sides of the leaves are illuminated by the setting sun. Two species are sold as *P. Alcockiana*. The quicker-growing one with quadrangular leaves is the true one; that with much flattened leaves is *P. Ajanensis*

avenues of it, therefore, are sometimes gloomy and make too harsh a contrast with the snow. They need to be supplemented by light-colored conifers, which are the cheery ones. A Norway spruce generally gets ragged in the top after thirty years. Ninety-nine times out of a hundred people plant trees so closely that they will never develop symmetrically. It is rare indeed to find as perfect a specimen as that in Fig. 42, which is about fifty feet high and half a century old. It is on the estate of Mr. James Wood, of Mount Kisco, N. Y.

A BETTER TREE THAN THE NORWAY

You can always tell a white spruce (*Picea alba*) by bruising the foliage, for its strong

aroma is characteristic. It is a lighter colored and therefore more cheerful tree than the Norway and longer lived, but slower growing. Since it is native, one can sometimes get small trees for the digging. On the Dana estate the white spruce seems to make a taller, longer-lived and more perfect windbreak than the evergreens, which are commonly planted for that purpose. The white spruce has an important blue variety (var. *glauca*), which is as perfect in its way as the Colorado blue.

THE MOST POPULAR HIGHLY COLORED CONIFER

Of all the highly colored conifers in cultivation the Colorado blue spruce (*Picea pungens*, var. *glauca*) is doubtless the most popular. It is the one conifer that everybody can recognize at sight. It is divinely appointed for a lawn specimen, and while it should have plenty of room to develop, it ought not to be planted in the middle of a lawn, but on the side or near the house—anywhere so long as it is in relation to something, because a conspicuous thing like this is only for accent or spice. This blue color



42. The Norway spruce, cheapest, quickest and most popular of all conifers. Used for windbreaks, screens, avenues and specimens. One of the most sombre evergreens. Usually gets ragged in the top after thirty years, and sometimes loses its effectiveness as a windbreak below. Overplanted in this country



43. Compare this specimen of the Oriental spruce (*Picea orientalis*) with the tree shown in figure 45. The habit of this tree is more compact because of summer pruning. Most of the tall-growing conifers can be treated thus

is not unique, as beginners think. It is merely an intensification of the glaucous hue or silvery lining that dozens of other conifers possess in some degree. Moreover, even in the Colorado blue spruce, there is such a big range of color that it will pay anyone who wants to put ten dollars or more into a perfect specimen to visit the nursery and pick out what he wants. In fact, it is possible to overdo the matter of blueness. It is a question whether a Colorado blue spruce planted against a black conifer, like the Norway, does not make too strong a contrast. On the other hand, the typical or green form (*Picea pungens*) is worth growing for its own sake. Both forms have stout, stiffly horizontal branches which are almost never broken out by windstorms, but it must be confessed that the oldest specimens in cultivation are beginning to get ragged. However, this will never affect the popularity of the Colorado blue spruce, for in the

course of twenty or thirty years of daily enjoyment a man gets his money's worth many times over.

THE MATE TO THE COLORADO BLUE

A tree that is often sold under the name of the Colorado blue spruce is Engelmann's spruce (*Picea Engelmanni*), another splendid tree from the Rockies. Being commoner than *Picea pungens*, its seeds are more easily secured in quantity. I doubt if there is any large item in favor of either species. Every country gentleman wants both species, and each can be had in green, white and blue-leaved varieties. You cannot distinguish the two species unless you see them together, when it becomes clear that a young Engelmann's spruce makes a narrower pyramid and the branches are more slender and crowded into denser whorls. If you grasp the foliage quickly it will not sting you as *pungens* does, and when you crush the needles they have a strong odor.

A SPRUCE WITH BRILLIANT RED FLOWERS

It is impossible to praise too highly the oriental spruce (*Picea orientalis*). I believe it is the most refined of all spruces. The combination of ascending branches and pendulous branchlets gives it an indescribable air of elegance, which in the case of large specimens is simply captivating. And when the tree is old enough to bear cones it has a unique beauty, for the staminate flowers are a brilliant carmine and stand up like so many red candles on a Christmas tree. The oriental spruce is a rather slow grower, and the new growth sometimes gets discolored by spring frosts, but it is otherwise quite hardy.

SPRUCES FOR THE CONNOISSEUR

The preceding species are the best for general planting. The following lack the combination of cheapness, quick growth and adaptability to a wide range of conditions which a popular favorite must have.

A UNIQUE JAPANESE SPECIES

There is a Japanese spruce named *Picea polita* which can be told at once from all

other spruces from the fact that its leaves are spreading, instead of pointing forward. These leaves are very rigid and sharply pointed, dark green and shining, and are borne on all sides of the branches, like a fir. It also resembles a fir in having stout, stiff branches. This tree is notable for the pronounced yellowish brown color of its bark, and in spring and early summer it is exceptionally beautiful by reason of the large and conspicuous buds which are protected by exceptionally lustrous scales.

THE WORTHLESS BLACK AND PROMISING RED

Just a word about our native red and black spruces. The former gets its name from the color of the bark; the latter from



45. The oriental spruce (*Picea orientalis*), slower growing than the Norway and therefore not so popular, but more refined. It has carmine flowers like Christmas-tree candles. Sometimes scorched by spring frosts



44. Mass planting of spruces on a gentleman's estate. White spruce back; Colorado blue in front (*Picea alba* and *P. pungens*, var. *glauca*). White spruce is one of the best for windbreaks

the total effect of its foliage as compared with that of the white spruce. The black spruce (*Picea nigra*) is not worth cultivating, being much disfigured by its cones, which are borne at an early age and hang on for years. It is also too slow growing.

The red spruce (*Picea rubra*), which was long considered a variety of the black, is a much better tree, although it is said to be short lived in the West. Of all the many native trees that have been neglected by our nurserymen in favor of European species, which are quicker, cheaper and easier for them to handle, the red spruce is one of the most promising. It is included by Professor Sargent in his famous list, published some

years ago, of the twelve conifers that have shown themselves able to grow to a large size and preserve in cultivation here their mature beauty for a long period.

The weak point about the red spruce is that it demands a cool and moist situation, and is not as drought resistant as the Norway, white and Colorado blue, which will stand a



46. Engelmann's spruce (*Picea Engelmanni*), sometimes sold for the Colorado blue, but if you grasp a bunch of leaves the needles will not prick you as those of the Colorado blue will do

greater range of soil conditions than the other spruces. All spruces prefer a cool climate and moist but well-drained soil.

All the spruces described above have four-sided leaves. The following have more or less flattened leaves, with white lines on what is technically the upper surface, but which by a twist of the leaf stalk appears to be the lower.

THE ALASKAN, SIBERIAN AND ALCOCK

One would think that a spruce from Sitka would be hardy, but *Picea Sitchensis* does not thrive well in the East. Whether or not the cultivated stock came originally from California, and is therefore tender, I cannot say. The tree does not like our hot summers, which is a pity, because of the beauty of the contrasting colors in its foliage.

However, a tree that is very much like the Sitka spruce and quite hardy is the Siberian (*Picea Ajanensis*). This is sometimes sold under the name of *Picea Alcockiana*, but it has flatter leaves than the true Alcock's spruce.

Probably the best spruce Japan has to offer is the true Alcock's spruce, which is sometimes sold under the names of *Picea Alcockiana nova* and *P. acicularis*. It is of more rapid growth than the Siberian spruce and has more slender branches.

THE ROC'S EGG—BREWER'S SPRUCE

Unhappily the most remarkable of all spruces has never yet been successfully cultivated. Brewer's spruce (*Picea Brewer-*

iana) has branchlets that hang straight down from the branches to a distance of six or eight feet! Imagine their beauty when waving in a slight breeze or streaming before a gale! But alas! out of 300,000 seedlings raised by Mr. Thomas H. Douglas, only one plant was alive when he wrote his interesting story for the "Cyclopedia of American Horticulture," and that tree was scarcely six inches high, having cost the owner at the rate of \$100 an inch!

THE BEST AVAILABLE WEEPING SPRUCE

But if we cannot have Brewer's spruce, some of us can have the Himalayan (*P. Smithiana*; *P. Morinda* of the nurseries). I believe this is the most beautiful of all spruces that are naturally pendulous—i. e., those whose branchlets—not branches—depend. Every conifer of importance is likely to have a variety *pendula*, but these are mostly horticultural forms, not natural ones, and it is the main branches that depend, giving so unusual an effect that they sometimes look like freaks. But the Himalayan spruce is naturally pendulous, and it is a pity that it is not hardy in New England. The young growth starts too early, especially in warm, moist situations, and is caught by spring frosts. We have a splendid specimen in a sheltered position at Dosoris.

There is a spruce from southeastern Europe, called *Picea Omorika*, the peculiar beauty of which is more easily felt than analyzed. It forms a dense and narrow pyramid and is a very hardy tree of slow growth. The leaves lie close to the branches.



47. The most popular blue conifer, the Colorado blue spruce. Although hardy, specimens in New England forty years old are beginning to lose their beauty. (*Picea pungens*, var. *glauca*.)

If you have a cone-bearing branch of any important cultivated spruce, you should be able to determine its correct name by consulting the key which follows. Choose first between A and AA; then between B and BB and so on until the last description that

tallies exactly with what you hold in your hand points directly to its proper name.

HOW TO DISTINGUISH THE SPRUCES

This "key" shows at a glance how each of the important species differs from every other.

- A. *Those with 4-sided leaves.*
- B. *Scales of cones closely packed before ripening.*
- C. *Cones 2½ to 6 inches long.*
- D. *Leaves spreading polita*
- DD. *Leaves pointing forward.*
- E. *Length of lvs. ¾ to 1½ in. Smithiana*
- EE. *Length of lvs. ½ to 1 in. excelsa*
- EEE. *Length of lvs. less than ½ in. orientalis*
- CC. *Cones ¾ to 2 inches long.*
- D. *Young branches reddish brown rubra*
- DD. *Young branches brownish yellow alba*
- BB. *Scales of cones loose before ripening.*
- C. *Branches slender, in dense whorls. Engelmanni*
- CC. *Branches stout, in rather remote whorls. pungens*
- AA. *Those with more or less flattened leaves.*
- B. *Scales of cones closely packed before ripening: lvs. slightly flattened.*
- C. *Young branches pubescent. Omorika*
- CC. *Young branches rarely pubescent. Alcockiana*
- BB. *Scales of cones loose before ripening: lvs. much flattened.*
- C. *Bark bright or dark red-brown Sitchensis*
- CC. *Bark dark gray. Ajanensis*

The Japan Cypresses, or Retinosporas

By Henry Maxwell

Photographs by HENRY TROTH

EVERYTHING about the Japanese dwarf cypresses, except the plants themselves, is just as mean and technical and perplexing as it can possibly be. To begin with, the name Japan cypress is a manufactured English name which the nurserymen do not know; there is no good common name for the whole group; the nursery name, Retinospora, is too hard (most people accent it on the syllable next the last instead of the third, and it was originally spelled with two i's instead of two o's); and to cap the climax, the botanists have abandoned the whole genus, declaring that these forms belong to the genus *Chamaecyparis* (which means dwarf cypress), or to the *arborvitae* genus, viz., *Thuja*.

But annoyance soon turns to delight when one sees the plants themselves (which have the softest and most feathery outlines of any small conifers), and to wonder, when one reads Mr. Rehder's brilliant account in the "Cyclopedia of American Horticulture" of the discovery that each of these familiar types has been identified with an adult form that has an utterly different aspect from the juvenile forms we know. The patient botanical soul may trace, through Mr. Rehder's article on Retinospora, these marvelous transformations in the shape and color of the leaves, the interrelations of these forms and their correct names, but for ordinary purposes the only way is to cut the Gordian knot by considering



48. A golden obtuse-leaved Japan cypress, *Retinospora obtusa*, var. *aurea*. (*Chamaecyparis obtusa*, var. *aurea*)



49. The thread-like Japan cypress, *R. filifera*. (Correct name, *Chamaecyparis pisifera*, var. *filifera*)



50. The dwarf obtuse-leaved Japan cypress *R. obtusa nana*. A popular small dark-green conifer

the *Retinosporas* as one horticultural group, and to use the nursery names.

The important types, then, are:

1. The obtuse-leaved Japan cypress, *Retinospora obtusa nana*.
2. The thread-like Japan cypress, *R. filifera*.
3. The spreading-tipped Japan cypress, *R. squarrosa*.

4. The feathery Japan cypress, *R. plumosa*.

Each of these has a green, a bluish and a "golden" form, the latter being generally about as true to its name as is boarding-house "lamb."

Unfortunately all the *Retinosporas* are short lived. Most of them have a different color in winter. They often assume bronze or ruddy hues in cold weather.

All the above forms are juvenile forms of two species which attain a height of 100 feet in Japan, and which are grown by our nurserymen. They make strong-growing, rugged trees. The Hinoki cypress (*Chamaecyparis obtusa*) is an important timber tree in Japan. The *plumosa*, *filifera* and *squarrosa* forms belong to the Sawara or pea-fruited Japan cypress (*Chamaecyparis pisifera*).



51. A tall specimen of the spreading-tipped Japan cypress, *R. squarrosa* (*C. pisifera*, var. *squarrosa*)



52. The feathery Japan cypress, *R. plumosa*. (Correct name *Chamaecyparis pisifera*, var. *plumosa*)



53. A tall sheared specimen of the same variety that is shown in the preceding picture

Evergreens for Formal Situations—By W. E. Pendleton New York

THE BEST SPECIES FOR FORMAL GARDENS, WINDOW BOXES, MASSING AT ENTRANCES AND BEDDING—THE BEST YELLOW, BLUE AND OTHER COLORS IN EACH TYPE, SUCH AS YEW, CEDAR, JUNIPER, ETC.

Photographs by HENRY TROTH, H. E. ANGELL and L. BARRON

IN an impossible city like New York, where every foot of ground is likely to be covered by stone, and a hole has to be cut in the pavement for every tree or vine, the universal



54. A formal garden of evergreens which looks attractive every day of the year, from the dining-room of a Yonkers home. Designed by Pentecost & Vitale

instinct toward something natural has expressed itself in countless hundreds of window boxes. In the summer, there is the conventional line of florist's stuff—geraniums, variegated periwinkle and other greenhouse plants; but in the winter every great house, club and hotel has its tubs, vases or window boxes of evergreens. It must be confessed that these stately plants often fit perfectly and add greatly to the distinction of a city home, but the slaughter among these innocents is heart-breaking. Every November they are at their best; the following May their return to the florist is like a retreat to Harbin. Next autumn new checks are drawn and the purveyor of evergreens once more takes a hopeful view of life.

The city servant's method of watering plants—fitful moments of zeal alternating with long intervals of neglect—is enough to account for more than half of this loss. Moreover, they are mostly in plants imported from Holland at a price with which Americans cannot compete; and they are chiefly varieties of Lawson's cypress (*Chamaecyparis Lawsoniana*), and other notoriously tender species



55. An evergreen alley on an American estate, showing hedge, arch and specimens of arborvitae

which can be grown with incredible ease, speed and cheapness.

The mortality is sufficiently high to warrant a study of the decorative conifers that are really hardy, so that one may order these things intelligently, especially as these same plants are now much used for massing at entrances, for lawn specimens, for beds and for formal gardens.

There are two theories about the use of these highly colored evergreens. One is that you may use them in all the places above mentioned and scatter them all over your yard, too; and the other is that such horticultural varieties, having originated in the garden, should be confined to the garden along with other highly artificial products that do not fit in with the landscape. The nurseryman usually takes the former view (he has them to sell), and the paradise of those



56. The best example of topiary work in America—a style of gardening not adapted to a country where estates are not entailed. The Hunnewell garden at Wellesley, Mass.

who think that yellow, blue and bronze conifers may be used in carpet bedding is Newport, where more money has been spent on gardening with less taste than on any place of equal size in the world.

If you try to select these plants for your window box or garden from the nursery catalogue, you will probably get involved in a maze of Latin names and give it up in despair. The best way is to go to a nursery and see the things. But for those who cannot do this, we will point out some of the standard material of known hardiness, giving the English language the preference—a reprehensible innovation in horticultural literature, apparently—with the standard and nursery names in parentheses.

THE ARBORVITAE TYPE

The best yellow one is George Peabody's golden arborvitae (*Thuja occidentalis*, var. *lutea*). Most yellow evergreens look as if they didn't mean it. (They are usually a sickly, pale yellow, except in the catalogues). This one is, or ought to be, a good, hearty golden yellow.

The globe arborvitae (*T. occidentalis*, var. *globosa*, or *compacta globosa*) is probably the best small button. About two feet high.

For globes five feet in circumference, Booth's is probably better (*T. occidentalis*, var. *Boothi*).

The best columnar variety is the Siberian (*T. occidentalis*, var. *Wareana*, or *Sibirica*), which stays pure green all winter instead of acquiring a dull brown hue, like the common arborvitae.

THE YEW TYPE

None of the European yews (*Taxus baccata*) are sufficiently hardy.

The best substitute for the Irish yew is either the Korean *Cephalotaxus pedunculata* (*Podocarpus Koreana*), or the Japanese *Taxus cuspidata*.

THE JUNIPER TYPE

The best substitute for the Irish juniper is the Swedish (*J. communis*, var. *Suecica*), columnar, but not quite as compact as the Irish juniper, which is not hardy enough.

The best bluish juniper, *J. Virginiana*, var. *glauca*.

The best for Japanese effects, *J. Virginiana*, var. *tripartita*.

THE SPRUCE TYPE

The common ones are all varieties of the Norway spruce (*Picea excelsa*).

The best globular one, var. *compacta*.

The best columnar form, var. *pyramidalis*.

The best small cone, var. *Remontii* of the nurseries.



57. One of the many small old-fashioned box-bordered gardens for which Camden, S. C., is noted



58. Dwarf-growing varieties of arborvitæ and retinospora with some of the yews for height are hardy in window boxes. Lawson's cypress, commonly used is not hardy, and must be replanted each season

THE UMBRELLA-PINE TYPE

The Japanese umbrella pine (*Sciadopitys verticillata*).

THE JAPAN CYPRESS TYPE (See page 27).

UNPLEASANT TRUTHS ABOUT FORMAL GARDENS

Any lady who is socially ambitious and has only a modest purse to draw on, would better think eleven times before deciding to have a formal garden. It costs more in the first place than an informal garden, and is costlier to maintain. She can never compete with the wealthy, who can do things on a bigger scale. Even they cannot maintain a formal garden generation after generation in a country where estates are not entailed. Formal gardens in America are usually either crude and new or old and dilapidated. If the evergreens and hedges fail to get their annual trimming they soon get beyond restoration. Every bit of untidiness in a formal garden is conspicuous. Every break in a hedge is an eyesore and can be filled only by plants of the same size from a reserve store grown especially for the purpose. The dominant evergreens of English and Italian formal gardens—box, yew and laurel—are not sufficiently hardy from Philadelphia north. Only in positions that are protected from winter winds and sudden bursts of sunshine, or in other exceptional circumstances, is box hardy in New England, and you can never tell what mild and innocent-appearing winter will kill a branch here and there in your oldest and most precious specimen. The North can never compete with the South or California in evergreen formal gardens. It will always be an uphill

struggle, full of losses and disappointments. Formal gardens become monotonous.

A great deal better thing to do is to grow conifers of known hardiness in simple, natural groups, so that the failure of one specimen does not spoil the whole effect.

But there are certain natures and certain situations that demand a note of formalism, and the least expensive way to gratify it is to lay out the garden in geometrical fashion; edge the paths with some coniferous evergreen which can be kept at a height of two feet by annual pruning, and grow flowers in the beds thus formed. If perennials rather than annuals are grown, there will be less trouble and expense and the garden will be far more interesting in April, May and June.

THE GREAT SUPERIORITY OF RED CEDAR

Anyone who has noticed the numberless half-starved red cedars in the country standing up on so many stilts, would hardly imagine that this evergreen is by far the most promising of all material for formal gardens in the northeastern United States. Yet so it is. The red cedar can be trained into nearly

every shape that is demanded in the formal garden. These dominant forms are as follows:

1. *The standard or bay-tree form.*—Of course, no conifer can take the place of a broad-leaved evergreen, but the bay must be kept in a house all winter.

2. *The dome.*—For this purpose the globose arborvitæ is superior to box, privet and *Catalpa Bungei*, since box is not hardy enough and the others are deciduous.

3. *The pyramid.*—In this form, the red cedar has to compete with arborvitæ, Nordmann's and the silver fir, and the Douglas, white and Norway spruce.

4. *The spire or column.*—In this shape, the red cedar will reproduce the effect of the cypress in Italian gardens.

5. *The arch.*—In default of a hardy evergreen vine, red cedars can be trained in pairs over iron pipes to form perfect garden arches six feet across and ten feet high.

Finally, the rugged picturesqueness of the famous Swiss stone pine can be reproduced by moving battled-scarred old cedars thirty or thirty-five feet high, their bare trunks crowned with an irregular tuft of foliage.



59. Tender evergreens like Lawson's cypress can be used for interior decoration. They endure about a year under such conditions as shown here—in the vestibule of an office building in New York City

The Scientific Moving of Big Evergreens

ONE OF THE WONDERS OF SCIENTIFIC HORTICULTURE—HOW EVERGREENS FIFTY FEET HIGH CAN BE MOVED IN MIDSUMMER AND WILL BE SURE TO LIVE—HINTS ON TRANSPLANTING SMALL TREES FROM THE WOODS

Written by an experienced tree mover. Photographs by HENRY TROTH and J. HORACE MCFARLAND CO.

THE old rule used to be: "Move deciduous trees while they are dormant; move evergreens in May or September"; and it is still a good rule for amateurs who have to do things in the ordinary way. But by scientific methods large evergreens can be moved any month in the year, though it is generally best not to leave the earth frozen on evergreens, whether large or small, in the winter



60. The ideal way to transplant an evergreen—the unbroken ball wrapped in burlap to prevent the air from drying out the feeding roots. Anyone can do this

months, because, a burst of sunshine or a keen winter wind will dry out the foliage faster than the frozen roots can send the sap to the leaves. The yellow cast of foliage in early spring shows when evergreens are suffering from this cause. On the other hand, if evergreens are set in warm soil, the roots can begin work at once, and if they have a month in which to prepare for summer drought or winter cold, they stand a good chance.

I have seen people transplant red cedars five or six feet high from the woods in November without preserving a ball of roots, and then wonder why their evergreens died the following May. It is not the big roots that count; it is the little fibrous ones that feed a tree; and it is far more important to preserve a big proportion of them than with deciduous trees for two reasons: First, the roots of an evergreen have an enormous leaf surface to support, while a tree that casts its leaves in winter is care-free. Second, if the roots of an evergreen are exposed for a few hours to the air, the resinous sap, which is so abundant in conifers, hardens and does not readily circulate again.

The scientific mover of large trees takes certain precautions which the general public almost never bother with when transplanting

evergreens: root pruning, preserving a ball, and bagging.

"Root pruning," in this sense, refers to a peculiar thing that is done several months before the tree is even taken out of the ground. An accurate circle—say six feet in diameter—is drawn about the tree, and a circular trench is dug with long nursery spades to a depth of perhaps four feet. Of course, all the roots in this trench are carefully preserved. The next step is to shovel carefully under the tree in a horizontal direction and break off all the roots that go down below that point. The trench is then filled and the tree is left for several months to adjust itself to the new condition which is something like that of a potted plant out of doors. This operation can be performed at any time of year. It does not have to be done in the spring or fall rush.

The necessity of root pruning can only be determined by the examination of experts, based on the soil, moisture, and root habit of the species. The most important thing is the preservation of the fine feeding roots outside of the ball and the cutting smooth of the ends of the larger roots. These ends should not be split or roughly cut. By preserving the feeding roots outside the ball several times the amount of support can be given the tree as when nothing but the ball of earth is saved. This is a work requiring skill, patience, and training. It requires special tools and costly machinery to hold and carry the tree and do the least damage to these outer roots. But the results are wonderful. Think of moving an evergreen over half a century old, forty feet high, and reestablishing it with a root system sixteen feet in diameter! Think of having shelter from the winter winds right off instead of waiting twenty years.

Many a New Yorker knows a particular

tree on the old New England farm where he was born for which he would gladly give a hundred dollars if he could permanently renew his associations with it. It might cost him less than the price of a piano to buy and move two or three such trees to his country home, where he can enjoy this priceless treasure for the rest of his life. Nowadays a man of means can drive about the country until he finds the most beautiful old tree he ever saw, and if he can buy it from the owner the chances are ten to one that it can be safely moved to his own home, provided it is prepared for the shock by root pruning several months in advance of transplanting time.

But, aside from these extreme cases, compare a tree ten to twenty feet high, that can be moved for say twenty-five dollars, with the ordinary three- or four-foot tree that you buy from the nursery for about three dollars. There are three enormous advantages in favor of the big tree.

First, these big trees will act at once as windbreaks, providing an outdoor winter playground for the children; protecting all sorts of choice plants that would not grow without it; prolonging the season of fresh vegetables from four to eight weeks; and sometimes saving enough on the coal bill alone to repay their entire cost in five years!

Second, they screen unsightly objects—barns, outbuildings, service yard, objectionable neighbors, factories and the like—thereby abolishing eyesores and giving privacy.

Third, they add immeasurably to the beauty of a place. They furnish the only possible way of taking off the raw, new look of a place and of giving the mellowness of old age which is perhaps the most potent element in the charm that English gardens have for us.

And these three great advantages you have immediately.



61. All these large trees were successfully moved to their present positions several years ago. Imagine how the place would look without them! (A picturesque old cedar in the foreground)

Modern Methods of Planning and Planting

REMARKABLE OPPORTUNITIES OFFERED BY ONE NURSERY FOR OBTAINING IMMEDIATE EFFECT

LAYING out new grounds? Don't proceed with the work without a definite plan as to what form the garden will ultimately take. You may not be able (or not willing) to put the whole scheme into execution at once. But by doing part of it now, some more next year, and adding the finishing touches as opportunity occurs, the final result will be a perfect one.

Where are you to get the stock? It is easy to take a planting list, and, by studying the prices in some catalogue, to come to a decision on a purely money basis. It is an easy way, but hardly the best. By paying a visit to a reliable nursery where a specialty is made of supplying all the plants and essential material necessary to a well-arranged home garden a real idea can be had of what these plants look like.

In a nursery such as that of Siebrecht & Son, at New Rochelle, N. Y., all the very

can. The proprietors have devoted considerable thought and skill to the new idea in nursery management—the artistic display of ornamental evergreens. By this we mean that the individual plants are set out as lawn specimens to exhibit their *use* as well as their character. By harmony and contrast, just as they may be arranged in your own garden, you can forecast the effects you will produce.

These Nurseries, moreover, are well furnished with all other material for the lawn and garden. Here you can also see the largest collection of palms, orchids, stove and greenhouse plants, roses, hardy herbaceous plants, magnificent bay trees, box trees, near the city. Another interesting detail will be to see the Rustic Factory, where *summer houses, wellhouses, settees, chairs and gateways* are made. If you are laying out grounds or filling conservatories, it is a great pleasure to be able to visit a place where everything may be had, where it can all be seen and selected by yourself. There is no other place where a complete order can be placed for everything the estate may need in the way of grading, road making, as well as furnishing stock and planting it direct from the nurseries.

One of the greatest benefits in receiving outdoor stock, such as ornamental trees, shrubs, evergreens, rhododendrons, fruit trees and vines from the Rose Hill Nurseries, is that they are so many times transplanted. Thus they move with large balls of earth and good, fibrous roots, which insure success in the new locations. Another specialty of the firm is moving large trees from twenty-five to fifty feet high, producing an effect which would ordinarily take from ten to twenty years.

Having been established since 1867 is ample proof that the Rose Hill Nurseries have been successful in growing and handling the best stock. The firm has its city

store, where you may call, leave your orders for flowers or decorations, or make an appointment to visit the Nurseries. There is not another shop in the city of New York where you can be shown everything for beau-



Lawn view at Rose Hill Nurseries, showing summer house and dwarf stone pine

necessary information can be gathered. For years the collection of ornamental plants which now characterize the Rose Hill Nurseries have been gradually gathered together, not by a mere collection of everything that is introduced, but by a critical selection of only such things as experience has shown to be hardy. All this collection of conifers is propagated at the nursery—the plants, therefore, are “to the manner born.”

But it may not be possible for a prospective customer to spend the time that a journey to New Rochelle involves, although the Rose Hill Nurseries are only forty-five minutes from the centre of New York City, the journey being by the N. Y., N. H. & H. R. R. from the Grand Central Station, and by trolley from New Rochelle station to the nursery.

If you cannot go to the nursery, the nursery (or rather one of the members of its large staff of expert plantsmen and experienced planters) will visit your place, and in direct personal consultation give you the benefit of all the practical advice that long acquaintance with similar situations will justify.

But by all means visit the nursery if you



The true Colorado blue spruce (grafted) on the lawn at Rose Hill Nurseries

tifying either your city home or country place. It is felt to be a pleasure at all times for this firm to give information about plants, estate management, and indeed for anything associated with the outdoor features of the home. They also publish a beautiful handbook, entitled: “Beautifying of Country Homes,” which can be had on application either at the city office, 425 Fifth Avenue, New York City, or their Nurseries, New Rochelle, N. Y.



Grouping or border planting of evergreens—conifers and trained box trees growing in the Rose Hill Nurseries

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How to Save a Whole Year on Strawberries

Photograph by HENRY TROTH

If you set out ordinary strawberry plants this September you will not get good strawberries until 1907, but if you set out potted plants in August you will have plenty of berries to eat next spring. The reason for this is that the potted plants have a perfect root system, while the ordinary ones suffer from the shock of transplanting. If you set out an ordinary strawberry plant in the blazing hot sun of August it will come to nothing, but these potted plants will never know they were moved, or rather they will laugh at the chance to send their roots anywhere.

Of course these potted plants cost more, but they are a perfect godsend, because every year thousands of people who move to the country forget to plant strawberries in



If you set out ordinary strawberry plants this fall you will get no berries worth while next spring, but potted runners like these yield a full crop next June

the spring or have no time to do so. Nowadays all the leading seedsmen and nurserymen have midsummer catalogues offering potted strawberry plants for home planting.

GROWING POTTED PLANTS AT HOME

“Why not pot some runners in my own garden?”

You can, if you start soon enough—say the last week of June—but you cannot expect home-grown runners potted in August to compete with those that have been carefully tended in the nursery since June.

These potted plants are produced by rooting the runners in the pots filled with fine garden soil and sunk to the brim around the old hills or between the rows of the old beds. In the home garden, where distances are short, it is quite possible to lift the plain runner plants for summer planting by working carefully with a trowel and taking up an abundance of soil with each plant, but rooting in pots is surer, even if it is a little bit more troublesome.

A week before the plants are to be put into the new bed, some time about the middle of August, they are separated from the old

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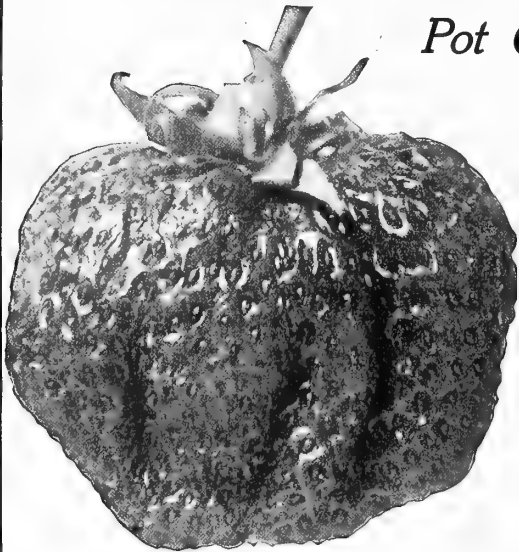
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plants by cutting the runner, and watered so as to be kept growing. Separated from the parent plant, the young ones will become thoroughly established on their own roots and develop strong and vigorous, ready to be lifted without suffering a shock.

STRAWBERRIES FOLLOW PEAS

Take the pots out of the ground, plants and all, and carry them to the site for the new bed, which should be in a part of the garden that has been in some well-cultivated crop during the early part of the season. Ground that has been in the main crop of peas will answer admirably for the new strawberry bed. It will be in the proper fineness and free from the insect pests which sometimes trouble the strawberry grower. After the pea vines have been cleared off in the middle of July the plot should be heavily manured and deeply plowed. Plowing should be deeper on dry soil, so that the ground will be opened up for the roots to penetrate as far down as they want to grow, which will give them protection in times of unusual drought; and this little detail of careful cultivation is equally true about other crops.

Turn the soil at least one foot whenever you dig the garden, and don't be alarmed if you do bring up a few inches of sand or gravel. It may bother you a little bit this year, but after one or two treatments in this way you will simply have added so many more inches in depth to your soil and thus have increased the fertility. This is particularly advantageous in strawberry growing, as the full growth of the next season's crop has to be made in very short time after frost is out of the ground in the spring.

JUST HOW TO MAKE THE BED

For the home garden strawberry plants can be set closer together than is the practice in commercial fields. With the rows two or three feet apart, and the plants about eighteen inches apart in the row, there will be ample room. (See June GARDEN MAGAZINE, page 221, for forceful illustrations of how to do that.) In planting the runners use a fork or trowel and have a guide line to make the rows straight; this will allow cultivation with the wheel hoe during the balance of the year. Water thoroughly after planting and see that the plants are kept growing until they become established. In the course of a few weeks cultivation should cease, and after the ground becomes frozed the whole bed, plants and all, can be covered with a mulch of thoroughly rotted manure, which will be ready for turning under in the spring as soon as the growth starts. One objection to the use of stable manure is its liability of carrying weed seeds into the strawberry patch, but there need be no fear on this score if the manure has been thoroughly rotted before it is put on the strawberry bed.

If you intend to make a new bed this summer be sure to select a spot such as is described, and don't forget to enrich it. As an old-time grower once said, "You can almost measure the size of your crop by the quantity of fertilizer you put into the bed when planting."

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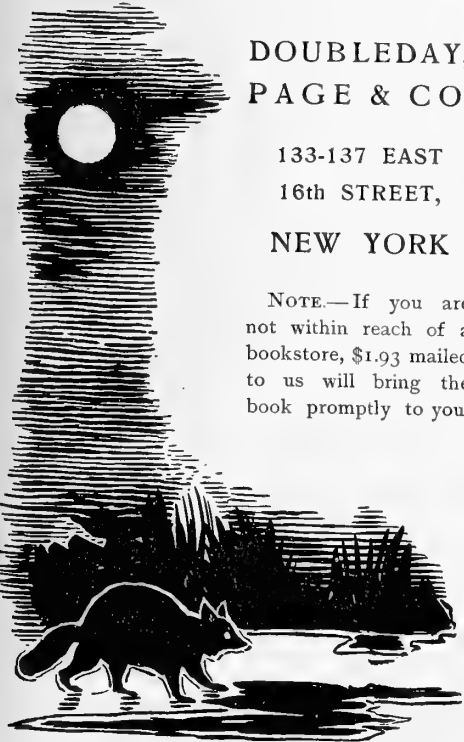
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The dracaena makes a long and large tap root, and at five years of age it is of greater



63. The dracaena of California, *Cordylina australis* (*Dracaena indivisa* of gardeners). Sometimes planted along roads, but is too uneven in height. These trees are same age. Could be kept uniform height by breaking out centre growth at same height

diameter than the stem above ground. When this tap root reaches rock or hardpan and is plentifully supplied with water, decay is soon induced and spreads upward until death of the top ensues. An instance is known, where dracaenas were evidently dying and were "abandoned," of the plants

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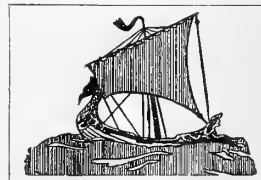
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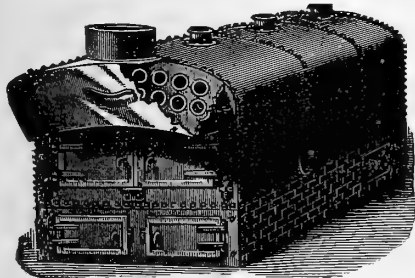
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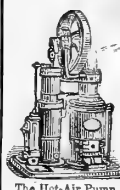
Yes, there are cheap forms of water-supply, just as there are cheap clothes, cheap shoes and cheap food. This, for instance, is a true picture, showing the effects of a recent cyclone on Long Island. Flat countries are especially subject to the uninterrupted sweep of winds, frequently so violent that no windmill, even when made of steel and iron, can withstand their force. Under such conditions the owner of a

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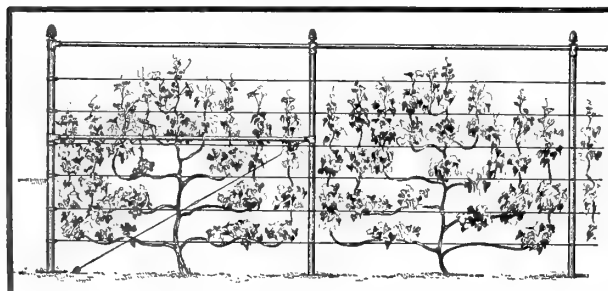
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returning to their usual vigor when neglected. Upon their being dug up a few years afterward, to make room for a new building, it was found that the tap root had rotted away for probably more than a foot and had subsequently healed. Whoever plants *dracænas* would do well to bear this in mind.

The *dracæna* is occasionally used for street alignment, but certainly is unfitted for such purpose. It does not grow large enough, in a score of years, to look well along a street of moderate width, but the greatest objection to its use as a plant to set in a row lies in the unequal growth, especially as regards height. Each *dracæna* seems to be a law unto itself. One will grow twice as fast as its neighbor that is but a few feet distant and is under precisely the same treatment. The flowers seem to be terminal, and when the first flower spike grows the main stem sends out lateral branches, but continues its upward terminal growth no farther. Some reach this stage at four feet in height, others not until they have reached to ten feet. Some flower at five years of age, others not until the tenth year.

The effect is demoralizing to formal plantations, and the only remedy known is to break out or cut off the terminal at the desired height or at the height at which the first plant blossoms. Sometimes a new "offset" terminal will push up and no lateral branches appear. This new terminal must also be broken out and then the plants will branch. With this treatment all may be kept at nearly the same height and with a sufficient similarity of appearance. ERNEST BRAUNTON.

Los Angeles Co.

How to Have Plenty of Flowers in August

IF you have a tree hydrangea, water it more thoroughly than anything on the place, and you will be rewarded by a grand show of huge flower trusses.

Water freely all growing plants. Do the work in the evening by preference. It is less wasteful, and not as trying to the gardener.

Collect seeds of spring wild flowers and start a wild garden from seed instead of ravishing the woods. You will enjoy the life histories of the wild flowers far more in this way. Collect trillium bulbs if you must, but you ought to buy them. You will find a lot of interesting Western trilliums in the bulb catalogues.

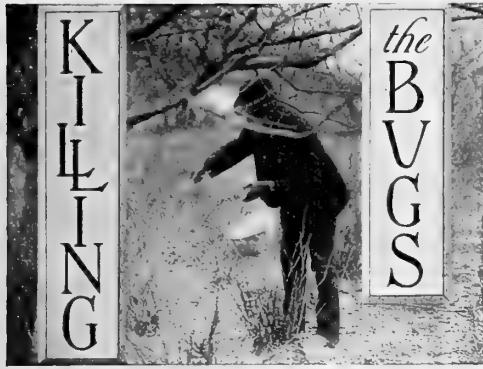
Pick young pods daily and you will have more flowers. Let nothing go to seed. Pinch off suckers from fruit and ornamental trees.

If flowers are few scatter some nitrate of soda and a little bone meal on the ground, rake it in and you will notice a big change three days after the first rainfall or artificial watering.

Divide plants in the hardy border which have bloomed. Rearrange as necessary, and get some big masses.

Mulch trees and the hardy border with lawn clippings, hay or anything to keep the moisture in the ground.

During August plant bulbs of *Lilium candidum* for flowers next summer. The sooner the better.



Four Pests in August

THE white nests of the fall webworm are most conspicuous during August. These unsightly objects enclose masses of browned and skeletonized foliage. It is easy to cut out the nest whenever seen at this time of the year and burn it with the caterpillars within, but a far more satisfactory method is to check the attack at the beginning by spraying the leaves thoroughly in the vicinity of the nest with an arsenical poison, preferably arsenate of lead.

Young San José scales are now being produced in large numbers, and consequently the pest will be detected on trees previously supposed to be free from the scale. If it is at all abundant it will be necessary to spray with either a whale-oil soap solution or kerosene emulsion, even though the application be only a temporary check. Use whale-oil soap solution at the rate of about one pound to six gallons; or the kerosene emulsion, standard formula, diluted with nine parts of water. But what is used must be applied with such care as to cover the whole tree.

The stalk borer is still working in the thicker-stemmed plants and doing damage in the flower garden. The only remedy is to cut off the stem below the point of injury and kill the borer.

Asters and some other plants flowering at this time may have their buds blighted by small, yellowish and black bugs about one-fourth of an inch long. The pest may be controlled by collecting the bugs in a small net or jarring them into a pan of kerosene and water.

EXPLODING ANT NESTS ON LAWN

The dry weather is favorable for ants' nests, which sometimes become unpleasantly prominent on our lawns, and cause injury by tunneling and loosening the earth about the roots of plants. They can be eradicated most easily by treatment with carbon bisulphide. The method is as follows: With a broom handle or iron bar make holes in the nest several inches deep and a few inches apart. Put in each about a tablespoonful of carbon bisulphide, close the holes quickly with earth, and throw a wet blanket over the entire nest. After a few moments explode the fumes collected underneath by reaching under the cover with a lighted match fastened to the end of a short pole. The explosion drives the deadly fumes of the carbon bisulphide deeper into the earth and adds materially to the effectiveness of the treatment.

E. P. FELT.

New York State Entomologist.

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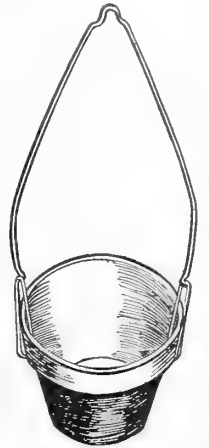
Prices: Sizes up to five inches, per dozen, 50 cents; gross, \$4. Sizes for pots, from five to ten inches, per dozen, 75 cents; gross, \$7.

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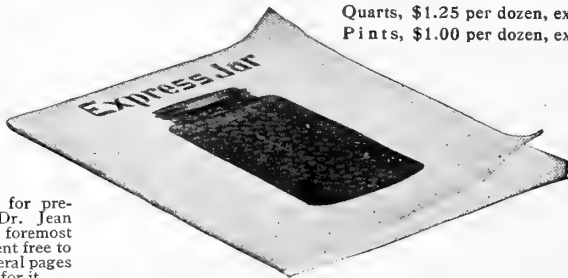
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How to Have Celery All Winter Instead of Vain Regrets

THE one thing that every home gardener should remember to do in the first week of August, but usually forgets, is to plant the late crop of celery for winter use. If possible, get the plants into the ground during the last days of July, but do it some time before August is far advanced.

Seed for the late celery crop was sown in April, or perhaps in May. The young plants will by this time be in the proper stage for transplanting. If you forgot to provide for a supply of late plants, no matter, for they can be bought at the seed store.

In large gardens, where there is plenty of room, the late celery crop has a space reserved for it from the first, the ground being cultivated from time to time and kept free from weeds, but not put to any other crop. In small gardens celery is grown as a second crop after early peas, lettuce, cabbage or beets, or it may be planted in the onion bed, by removing every third row of onions, to be stored as sets, and leaving the rest for late harvesting.

There is just one requisite to successful celery culture—deep soil, and the deeper the better! Failure in the late celery crop is because the roots do not get sufficient moisture, and mere surface watering will not suffice. The plant wants cool roots, with plenty of moisture, but not stagnant water. Before planting, therefore, prepare the ground thoroughly by plowing, harrowing and smoothing off. The small home gardener will dig two spits deep and rake.

The easiest way to plant out is to make a furrow six inches deep and fill in with three inches of fine well-rotted manure or rich compost. This will hold water for the roots and provide the ideal conditions. Next mix the manure with the soil and fill in the furrow nearly level with the surface—say to within an inch or less. The garden fork is the tool to use for mixing.

Plant dwarf, self-blanching celery in rows two and a half feet apart, and not closer than six inches in the row, the home gardener should not plant tall kinds; the common tall varieties occupy far too much room in the garden and are not so convenient to handle in the blanching process.

Before taking the young plants from the seedbed or box, soak them thoroughly with water, and just before planting trim the tops (cutting off one-third) and dip the roots in water. Don't expose the roots to the sun during transplanting, and do the work on a dull day if possible.

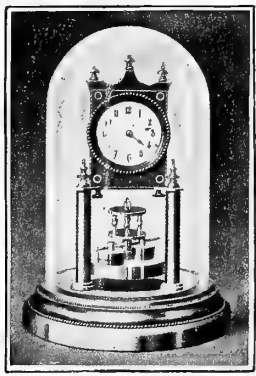


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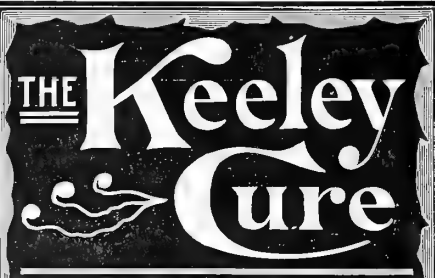
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On a hot, dry day I water the trench in which each plant is set, throwing in a little earth—just as a mulch to hold the water. After the whole row is planted I go over the whole with a rake and finish off.

AN ONION THOUGHT FOR AUGUST

If you have too many onions at this time from spring sowing, the small bulbs may be harvested in August and kept as sets for early planting next spring. These will mature for early summer use. It matters not how small a set you have, it will make a respectable onion for use next season. Pull up the sets with a rake—that saves time—and spread them out to dry. Store them, tops and all, in shallow boxes in a cool cellar or in an outhouse till frost comes, when they are to be covered with hay or straw and so kept frozen all winter. Of course they can be cleaned before being stored, which saves work in the spring, but usually one is too much occupied in summer enjoyments in August or September to enjoy cleaning up onions.

The Welsh onion sown in August will be ready for use as a salad or seasoning in early spring. This does not make a bulb like the common onion, being grown for its leaves only.

L. B.



August Bulbs for Christmas Flowers

THE Roman hyacinths and paper-white narcissi are so easily grown for Christmas flower that the amateur should not neglect to start up a few bulbs of each. Pot the bulbs in August, placing three bulbs in a five-inch pot, and using soil as for the Dutch bulbs. Give one good watering and plunge the pots in a frame or in the cellar (where they can be covered with coal ashes). In about six weeks they will be thoroughly rooted and may be brought into the light.

For the window garden there is nothing better than these two easily grown bulbs. If only a few pots are brought into the light at one time a longer season of bloom can be assured than if all the supply is started into growth at once.

THE FATAL FROST

It is very important that the place where the pots are plunged for rooting the bulbs is quite free from frost. The Roman hyacinths are very sensitive to cold, and failure in their growth (as in the case of the Dutch hyacinth too) is more often due to frost reaching the bulbs than to all other cultural shortcomings combined.

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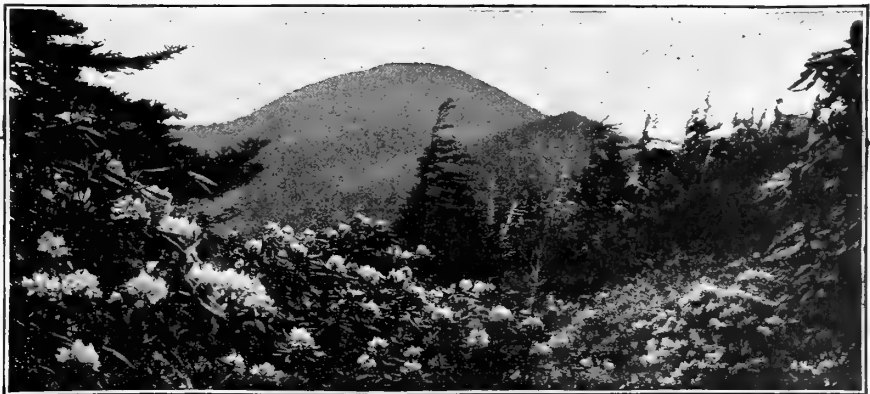
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English Names of Some Common Conifers

- Abies balsamea* Balsam fir
- Abies concolor* White fir
- Abies Nordmanniana* Nordmann's fir
- Araucaria excelsa* Norfolk Island pine
- Cedrus Atlantica* Mt. Atlas cedar
- Cedrus Deodara* Deodar
- Cephalotaxus Fortunei* Fortune's cluster-flowered yew
- Chamaecyparis pisifera* Retinospora (see page 26)
- Chamaecyparis Lawsoniana*, var. *erecta viridis* Dense Lawson's cypress
- Chamaecyparis sphaeroidea* White cedar
- Chamaecyparis thuyoides* White cedar
- Cryptomeria Japonica* Japan cedar
- Cupressus macrocarpa* Monterey cypress
- Cupressus sempervirens*, var. *fastigiata* Erect Roman cypress
- Juniperus Canadensis* Canadian juniper
- Juniperus Canadensis*, var. *aurea* Golden Canadian juniper
- Juniperus Chinensis* Chinese juniper
- Juniperus Chinensis*, var. *prostrata* Prostrate Chinese juniper
- Juniperus communis* Common juniper
- Juniperus communis*, var. *aurea* Golden juniper
- Juniperus communis*, var. *alba spica* White-tipped juniper
- Juniperus communis*, var. *Douglas Golden* Douglas's golden juniper
- Juniperus communis*, var. *Hibernica* Irish juniper
- Juniperus communis*, var. *prostrata* Dwarf juniper
- Juniperus communis*, var. *recurva squarrosa* Drooping juniper
- Juniperus Japonica* Japan juniper
- Juniperus prostrata* Carpet juniper
- Juniperus recurva*, var. *squamata* Hardy drooping Indian juniper
- Juniperus Sabina* Savin
- Juniperus Sabina*, var. *tamariscifolia* Tamarisk-leaved juniper
- Juniperus Virginiana* Red cedar
- Juniperus Virginiana*, var. *Barbadensis* Barbadoes cedar
- Juniperus Virginiana*, var. *glauca* Glaucous red cedar
- Larix decidua* European larch
- Larix laricina* Tamarack
- Libocedrus decurrens* Incense cedar
- Picea alba* White spruce
- Picea Canadensis* White spruce
- Picea Engelmanni* Engelmann's spruce
- Picea excelsa* Norway spruce
- Picea excelsa*, var. *inverta* Weeping Norway spruce
- Picea nigra* Black spruce
- Picea nigra*, var. *Doumettii* Dense black spruce
- Picea Omorika* Serbian spruce
- Picea orientalis* Oriental spruce
- Picea pungens* Rocky Mountain spruce
- Picea pungens*, var. *glauca* Colorado blue spruce
- Picea rubra* Red spruce
- Pinus Austriaca* Austrian pine
- Pinus Banksiana* Gray pine
- Pinus Bungeana* Lace-bark pine
- Pinus Cembra* Swiss stone pine
- Pinus densiflora* Japanese red pine
- Pinus divaricata* Gray pine
- Pinus montana* Swiss mountain pine
- Pinus montana*, var. *Mughus* Mugho pine
- Pinus ponderosa* Yellow pine
- Pinus resinosa* Red pine
- Pinus rigida* Pitch pine
- Pinus Strobus* White pine
- Pinus Strobus*, var. *brevifolia* Dwarf white pine
- Pinus sylvestris* Scotch pine
- Pinus Thunbergi* Japanese black pine
- Pseudotsuga Douglasii* Douglas spruce
- Sciadopitys verticillata* Umbrella pine
- Taxodium distichum* Bald cypress
- Taxodium distichum*, var. *pendula* Weeping bald cypress
- Taxus baccata* Yew
- Taxus baccata*, var. *aurea* Golden yew
- Taxus Canadensis* Trailing yew

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<i>Thuja orientalis</i>	Chinese arborvitae
<i>Thuja orientalis</i> , var. <i>aurea</i>	Golden Chinese arborvitae
<i>Thuja orientalis</i> , var. <i>compacta aurea</i>	Dwarf golden Chinese arborvitae
<i>Thuja orientalis</i> , var. <i>Rosedale hybrid</i>	Rosedale hybrid arborvitae
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<i>Tsuga Canadensis</i> , var. <i>microphylla</i>	Dense growing hemlock
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Why Some City Wistarias Fail to Flower

PERHAPS my experience with wistaria will interest Mr. Stearns (May GARDEN MAGAZINE, page 204), and it may help others. In 1880 I layered two shoots of a vine, which was then four years old. The next spring one of these new plants was set out in front of my house which faced east; the other was planted in the rear. The vine in front was trained over the second story with full eastern exposure—the other was trained over a low trellis or arbor about nine feet high, to make an extension to the kitchen porch; it was protected on all sides by buildings. This vine bloomed the fourth year and rarely failed of a profusion of flowers every spring after, but the one at the front of the house did not bloom till it was fifteen years old (1895), and up till 1902 only twice since has it given a few flowers. The original plant never bloomed.

I found on examination that the cause of failure to bloom in the plant at the front of the house was that the buds were caught by late frost. The flower buds began to grow before the leaf buds, and were sometimes a half-inch long before any leaves were to be seen, and at that time a very slight frost was sufficient to kill them. In February I cut back all dead wood, to the first live bud, and when blooming was done I trimmed it back just as far as I wished.

Perhaps many wistaria vines, which are complained of as not flowering, really stand in need of protection from frost.

Dayton, O. H. S. JEWETT, M. D.

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NOTICE: VILLAGE, CITY, PARK IMPROVEMENT SOCIETIES

And all outdoor art associations, with or without a regular organization, will confer a favor on this magazine by sending their names and addresses to this office. We wish to keep the Secretary's name on file and be able to communicate with him at any time. Will you help us to make this list complete?

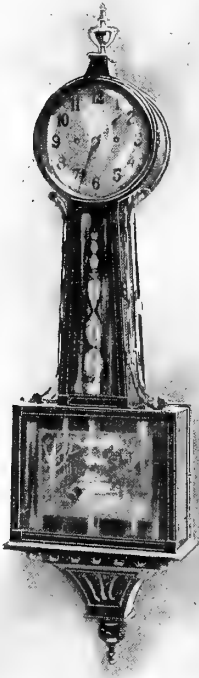
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[In this department we invite suggestions from amateurs concerning anything connected with the home garden. If you have worked out the ideas, so much the better. We offer a five-dollar bill for the best suggestion that comes to us each month. Address Suggestions Department, THE GARDEN MAGAZINE, 133 East 16th Street, New York, N. Y.]

The award of Five Dollars is made to Miss L. Greenlee, Garden City, N. C., for some valuable suggestions for the improvement of the seed-planting tables. We are planning to incorporate Miss Greenlee's ideas in the spring planting number next April.

A Good Use for Tin Cans

THE midsummer drought seldom affects our garden, and one reason for it is that we use perforated tin cans as a means of watering the plants. One is set in the ground near the root of each plant or hill. Thus far we have used them only for tomatoes, cucumbers, squash and eggplants, but there are other vegetables that would no doubt be benefited by the same treatment, especially peas and lettuce. This kind of watering is far better than simply wetting the surface of the soil with a watering pot, as that only brings the small rootlets to the surface, to suffer from succeeding dry weather. Any reasonable method of sending the water deeper is to be recommended, and for this reason the tall cans are better than the shallow ones. We made two mistakes in our first experiments; one was that we made only one hole in the bottom of the can and the water ran through too slowly—the bottom should be riddled with holes—the other was that we set the tops of the cans even with the surface of the soil and the rains and cultivation soon caused the soil to fall in and stop up the drainage. The top should be an inch or more above the soil level. We corrected these conditions later, and since then have found the can system a very satisfactory one. It is the best method of applying soapy water from the laundry for tomatoes, cucumbers and other vegetables, being a much cleaner job than doing it with a watering can, besides giving more benefit to the plants, in proportion to the water carried. The cans will last more than one season.

We have some experiments in view. Lettuce thrives on the water treatment. Radishes are improved by nitrate of soda, which can be dissolved in water, and beets are benefited by salt. We intend to plant a double row of each, with a can here and there between the rows, and administer the doses in that way, comparing them with rows of the same vegetable not so treated. Shallow cans would probably be as good, or better, for beets and radishes.

I. M. A.

New York.

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Replanting Bulbs in August

DUTCH bulbs (tulip, crocus, narcissus and hyacinth) that bloom outdoors year after year should be replanted occasionally to get the best results. August is the time to do it, because the bulbs are then dormant. If replanting is delayed till fall, the bulbs will have made root growth which will necessarily be damaged by handling.

Hyacinths.—These require to be taken up, dried and replanted every year. Prepare the spot that is to receive them in a place that is sunny yet sheltered, with good soil, well drained and dug more than a foot deep. Set the bulbs about six inches apart and deep enough so that there will be four inches or more of soil above the bulbs. A little sand placed around them will help the drainage. The largest and heaviest hyacinth bulbs that have been in the ground for the season may be set aside to pot for cutting. The flowers will be three weeks earlier than the imported bulbs, though not as large. Plant them the first of September and treat as usual for potted bulbs, giving them a good soil. The best combination is leaf mold, turfy loam and well-decayed cow manure, an equal amount of each, with enough sand to make the mixture porous. Use pots of five inches or of smaller size, set the bulbs close and let their tops be level with the surface of the soil, which should be left loose, not pressed hard. Water well, and set in a dark, cool place for six weeks or more. When the pots are full of roots the plants are ready to start into growth.

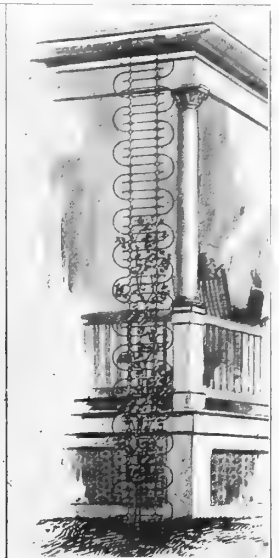
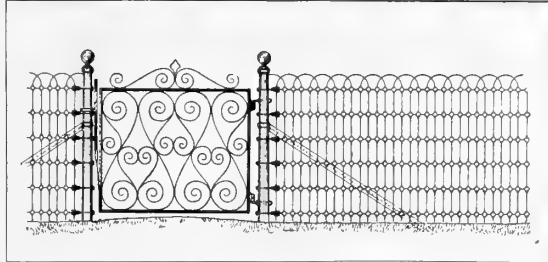
Tulips.—These will be all the better for replanting every year, but will give better returns a second season in the same spot than hyacinths will. Reset them in a deeply dug bed made rich with well-decayed manure; fresh, coarse manure is not good for them. Leaf mold and sand should be added if the soil is heavy. Place the bulbs five inches apart and three to five inches deep. An open, sunny spot agrees best with them.

Crocus.—These form their new corms over the old ones, so must be taken up every three or four years to prevent their being too near the surface. An easy way to plant them is to make a trench three inches deep and set them three inches apart. They will flourish best in an open, sunny place.

Narcissus.—These will become spindly, lose their strength and stop blooming unless replanted every three or four years. The soil should be the same as for hyacinths. If the bed is in partial shade, the flowers will last longer. Set the bulbs three inches deep and four or five inches apart.

It is sometimes desirable to remove bulbous plants before their foliage has ripened, to make room for bedding plants. This can be done if they are very carefully handled. Tulips, especially, are brittle at this stage. A partially shady spot should be chosen, where they can be "heeled in" to stand until the foliage is thoroughly dry, then they can be taken up, dried, cleaned and stored in dry sand or paper bags in the cellar. A cool temperature is best for storing bulbs; one that is neither hot nor freezing cold.

New York. I. M. A.



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gathering fruit from the tree in good condition. Price, net, 35 cts.; add for handle, 8 feet, 20 cts., 10 feet, 25 cts. This is our special offering for August.

A good **WINE PRESS**

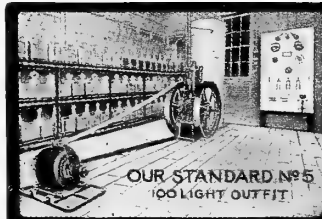
These have wrought iron screws and are used for pressing berries, grapes and other fruits. No. 1 cap, 2 gals., special price, \$3.50 net. No. 2 cap, 5 gals., special price, 4.00 net.

Send for leaflet illustrating our Cider Mill and larger size presses.



Headquarters for all Implements and Machinery for Farm, Field and Garden

J. S. WOODHOUSE, 191 and 195 Water Street, New York



Your Own Electric Light Plant

We have complete outfits for residences of any size, summer homes, camps, hotels, schools, launches, yachts, etc. Every detail included; very best material; absolutely practical. So simple no electrician required. **Light all the Time**, as storage battery included. **Gas, Gasoline or Steam** engines used give plenty of power for pumping water, sawing wood, refrigeration, etc. We would like to send every reader of THE GARDEN MAGAZINE who is likely to be interested our new 60-page Catalogue describing over 130 different outfits. Address Lighting Dept.

RICHARDSON ENGINEERING CO., HARTFORD, CONN.

ORCHIDS

for

Greenhouse Window Garden and Home

The best grown plants of this species furnish orchid blooms at less than a penny an orchid.

WE HAVE just secured a fine importation of orchids (*Oncidium*, Var. *Rogersi*). Flowers are rich golden yellow, 2 to 2½ inches in diameter, growing in long drooping panicles, 150 to 200 flowers on strong plants.

This orchid blooms in winter, easy to cultivate in greenhouse, window garden or home.

Special (PRICE, for selected, strong growing plants ready to start, if you answer this advertisement now) **\$1.00 each, prepaid** Six for \$5, twelve for \$10

For 25 cents additional will send material for planting and basket.

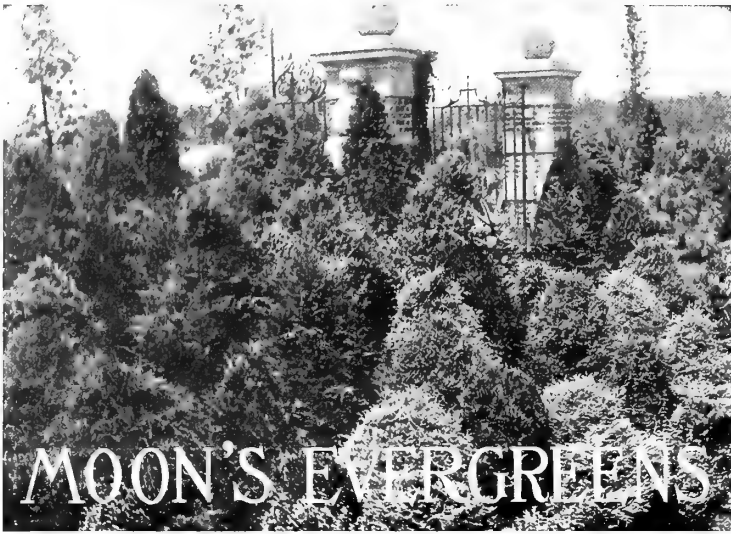
Full directions for successful growing with every plant.

SEND FOR our new Bulb CATALOGUE.

Bulbs planted in August and September give a profusion of flowers for Christmas.

H. H. BERGER & CO., 47 Barclay St., New York





MOON'S EVERGREENS

are renowned the country over for their excellence of quality. For their symmetry and beauty as well as for their vigor and health they are justly famous.

You will find in our nurseries the finest specimen stock, from the dwarf Juniper and Columnar Arborvitae to the stately Nordmann Fir and the exquisite Oriental Spruce. An unequalled stock of fine symmetrical, Green, Golden and Silver Retinosporas; bushy Norway and Hemlock Spruces in perfection of health, Evergreen Hedges, and in fact some evergreen for every purpose. Besides the domestic sorts, we have gathered from foreign countries the rarest varieties and acclimated them.

To purchase evergreens without considering our stock would be to miss the greatest collection of the most well developed evergreens to be found in an American nursery.

Send for our Hand Book containing descriptions, illustrations, sizes and prices.

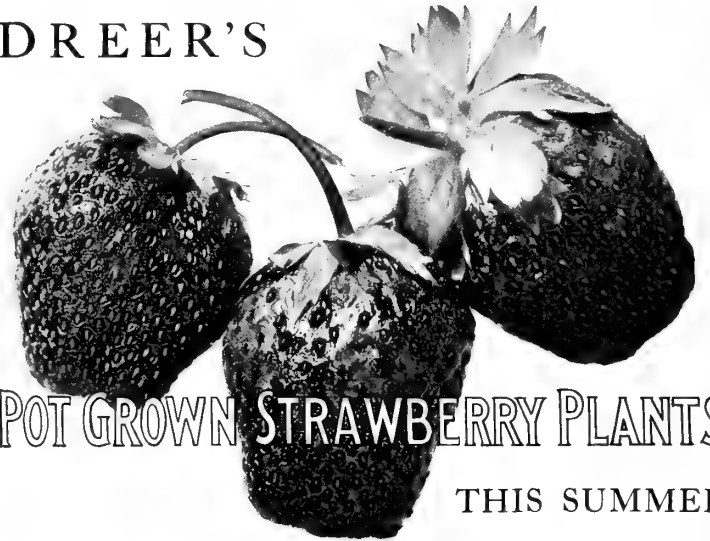
THE WM. H. MOON COMPANY,

Philadelphia Office, 21 South 12th St.

Glenwood Nurseries, Morrisville, Pa.

Large Luscious Berries Will Be the Result of Planting

DREER'S



POT GROWN STRAWBERRY PLANTS

THIS SUMMER

Dreer's Mid-Summer Catalogue

is now ready. It tells all about the best varieties of Strawberries, also offers Celery, Cabbage and other Vegetable Plants, Palms, Ferns and Decorative Plants. Vegetable Seeds for planting during the Summer and Fall. Seeds of Old-fashioned Hardy Perennials and other Flowers for present sowing. Lawn Mowers and Garden Requisites of all kinds. A copy will be mailed free to all applicants who mention this magazine. Write for it to-day.

HENRY A. DREER

714 Chestnut Street, PHILADELPHIA, PA.

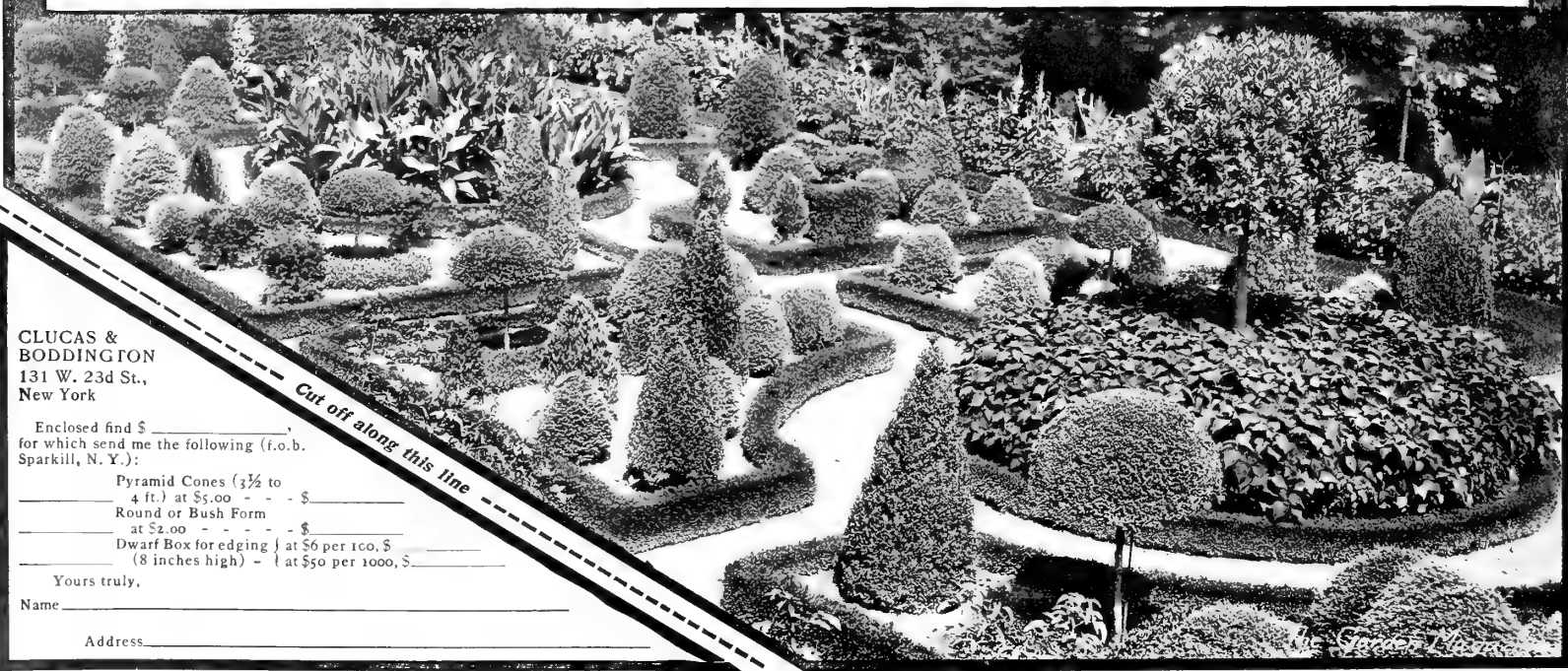
FOR YEARS we have been working to grow the best hardy Box trees for **Formal Gardens** and **isolated positions**. Our **Special Offering** this month is of this finest of all evergreens, the cream of our stock carefully grown, closely clipped and ready for immediate use.

Our Extra Special August Offer of Fine Trees

- Pyramid Cones, 3 1/2 to 4 ft. high, \$5.00 each
- Round or Bush form - - - \$2.00 each
- Dwarf Box for edging, } \$6.00 per 100
- 8 in. high, - - - } \$50.00 per 1,000

Our new Fall Catalogue will describe all evergreens and other plants especially suitable for formal gardening. **Send for it.**

CLUCAS & BODDINGTON, 131 West 23d Street, New York
(Palisade Nursery, Sparkill, N. Y.)



CLUCAS & BODDINGTON
131 W. 23d St.,
New York

Enclosed find \$ _____
for which send me the following (i.o.b.
Sparkill, N. Y.):

- Pyramid Cones (3 1/2 to 4 ft.) at \$5.00 - - - \$ _____
- Round or Bush Form at \$2.00 - - - \$ _____
- Dwarf Box for edging } at \$6 per 100, \$ _____
- (8 inches high) - } at \$50 per 1000, \$ _____

Yours truly,

Name _____

Address _____

EVERGREENS FOR SUMMER, FALL, and SPRING



'05
&
'06
V

Photographic view of home of Mr. J. O. Shroyer, Agricultural Writer and Journalist, Humboldt, Nebr.

Mr. Shroyer writes us as follows: "Humboldt, Neb., Mar. 20, 1905.—Evergreen Nursery Co., Sturgeon Bay, Wis.—Please send the following order to me by express at once, and oblige. I have bought trees of you for a number of years, and have had the best of success in getting them to grow, as they are fine trees and always arrive in the best of condition. Your prices are as low as anyone could ask. Wishing you might reach every Nebraska home with enough Evergreens to plant a grove such as I have from your Nurseries, I am, Yours truly, J. O. SHROYER."



Grounds of Mr. R. H. Hazard, Peace Dale, R. I.

With his order to us for Evergreens last year, Mr. Hazard writes as follows: "Your Hemlock Hedge furnished us some years ago is so fine that all my neighbors wish they had known your address sooner." (See price list next column.)



Home of Mr. Elijah Bowman, Caledonia, Mich.

A few dollars' worth of Am. Arbor Vitæ made these trimmed specimens, and double this hedge.



Mrs. Sarah E. Phillips' A. Vitæ Hedge, Savannah, Mo.

200 Am. A. Vitæ, planted 8 yrs. ago. Her son writes: "It is the envy of all our neighbors."

OUR EVERGREENS are in every state of the United States. We ship anywhere, because we pack scientifically. Shipments for summer planting are preferably made by express, unless to nearby states. All the trees shown in the reproduced photographs on this page are from these nurseries, and the photos procured for us by the owners of the trees.

ARBOR VITÆ, American—*T. occidentalis*.

	EACH	10	100	1000
Transplanted, 4 to 8 inch	05	20	1 50	10 00
" 8 to 12 inch	06	30	2 50	18 00
" 12 to 18 inch	10	40	3 50	25 00
" 18 to 24 inch	15	80	5 00	40 00

ARBOR VITÆ, Chinese A. V.—*Biota Orientalis*.

Seedlings, 2 yr. 4 to 8 in.	05	25	1 50	12 00
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BALSAM FIR—*Abies balsamea*.

Transplanted, 4 to 8 inch	05	20	2 00	10 00
" 8 to 12 inch	08	30	2 50	15 00
" 12 to 18 inch	10	50	4 00	30 00
" 18 to 24 inch	15	1 00	7 00	55 00

PINE, Austrian—*Pinus Austriaca*.

Transplanted, 4 to 8 inch	06	50	4 00	30 30
" 8 to 12 inch	08	60	4 50	40 00
Seedlings, 3 to 6 inch	08	50	1 50	10 00

PINE, Scotch—*Pinus Sylvestris*.

Transplanted, 8 to 12 inch	08	60	4 00	35 00
Seedlings, 4 to 6 inch	05	50	1 25	8 00
" 6 to 8 inch	08	50	1 50	10 00

PINE, White—*Pinus Strobus*.

Transplanted, 4 to 6 inch	04	25	2 00	18 00
" 6 to 8 inch	06	40	3 50	30 00
" 8 to 12 inch	10	65	5 50	40 00

SPRUCE, Englemann's—*A. Englemanni*.

Transplanted, 4 to 8 inch	10	60	5 00	40 00
" 8 to 12 inch	15	1 00	8 00	-----

SPRUCE, Hemlock—*Abies Canadensis*.

Transplanted, 4 to 8 inch	05	30	2 00	18 00
" 8 to 12 inch	15	65	4 00	30 00
" 12 to 18 inch	20	1 00	6 50	45 00

SPRUCE, Norway—*Abies excelsa*.

Transplanted, 8 to 12 inch	08	30	2 00	15 00
" 12 to 18 inch	10	40	3 50	25 00
" 18 to 24 inch	15	90	6 00	45 00
Seedlings, 2 to 4 inch	--	10	25	2 00
" 4 to 6 inch	02	15	50	3 50
" 8 to 12 inch	04	20	75	7 00

SPRUCE, White—*Abies alba*.

Transplanted, 8 to 12 inch	10	50	4 50	30 00
" 12 to 18 inch	15	90	7 50	60 00

SUMMER PLANTING.

While we are perhaps not quoted extensively on "summer planting" of Evergreens, we have doubtless had more than the ordinary experience in that line. Last summer we planted nearly half a million Evergreens of the standard varieties listed above. We offer in the brief price list given here, only such varieties as we have learned from experience to be among the very best. We have a more extensive list that will be sent on request. Our Evergreens may be planted successfully in Aug., Sept., and Oct., but the earlier the better. We advise ordering right now, and from the above list. Satisfaction assured. Shipping seasons, Summer, Fall, Spring

EVERGREEN NURSERY CO.
Sturgeon Bay, Wisconsin.



Farm Home of John Fellow, Windfall, Ind.

100 of our Nor. Spruce, 10 ft. apart made this screen at trifling cost. (They were bought of us.)



J. K. McAndrew's Grove of Pines, etc., Max, Iowa.

He writes, "I have one of the nicest Evergreen groves in this part of the state, from trees that I bought of your Nursery." (See price list here.)



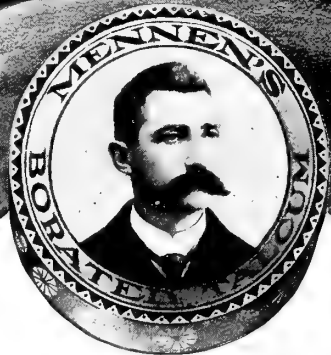
Oluf Johnson's Windbreak and Hedge, Rio, Wis.

May 15, '05, he writes, "The Evergreens and all other trees I bought of you are fine and a constant pleasure, and the admiration of all who see them."

MENNEN'S

BORATED TALCUM

TOILET POWDER



Following the Hounds

Riding or driving, Wind, Dust and the Sun's Heat are a continual source of irritation to delicate skin: but you can always find immediate relief in

MENNEN'S

Borated Talcum

Toilet Powder

Nothing is so cooling and soothing to a parched skin, nothing so quickly relieves PRICKLY HEAT, CHAFING, SUNBURN and all other skin troubles of summer.

MENNEN'S Borated Talcum TOILET POWDER is unequalled. After bathing and after shaving it is delightful, and is indispensable for old and young.

NOT ON OUR PACKAGE, BUT ON OUR POWDER, WE HAVE BUILT OUR NATIONAL REPUTATION. See that you get the original. Avoid ordinary powders, highly scented with cheap perfume, and put up in ornamental packages. The price of great success is a host of imitators. Don't be misled by the unscrupulous dealer who says "just as good."

MENNEN'S is sold everywhere or by mail, 25c. Sample Free.

Gerhard Mennen Company

76 Orange Street, Newark, N. J.

Try *MENNEN'S VIOLET TALCUM*

SEPTEMBER

1905

Forcing Christmas Flowers with Ether

The Canning and Preserving Problem

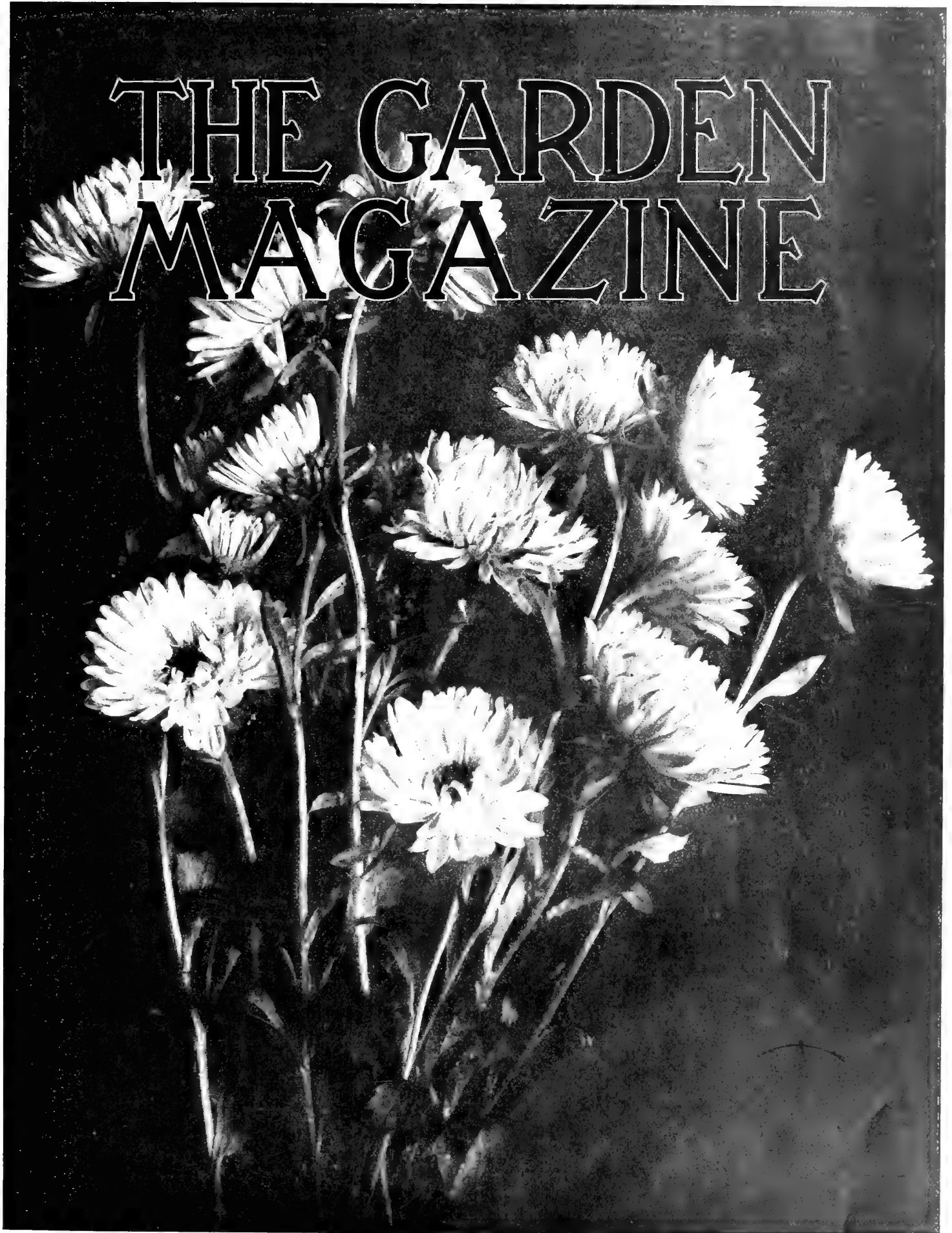
Planting the Popular Peony and Hydrangea

September Suggestions

10c.

\$1.00 a Year

THE GARDEN MAGAZINE



COUNTRY LIFE
• IN AMERICA •



DOUBLEDAY PAGE & CO
133-135 & 137 EAST 16TH ST. - NEW YORK



THE WORLD'S
• WORK •



A Wild Garden

With charming wild Ferns, Orchids, Arbutus, Trilliums and the wild flowers of woodland and meadow will bring rare delight to your grounds.

AUTUMN

is a good time to put them out. A large part of my nursery is given over to the growing of the best ferns, orchids and wild flowers taken from nature, best suited for cultivation. Grown in cold New England they are perfectly hardy. I have made a dainty little booklet of 50 pages entitled "Gillett's Hardy Ferns and Flowers," containing descriptions and directions for cultivation which will interest you. It also tells something of hardy perennials for the old-fashioned flower garden. It will be gladly sent to you on request.

EDW. GILLETT

Southwick Nurseries SOUTHWICK, MASS.

Iron Railings, Wire Fences, Entrance Gates



WE MAKE and erect Iron and Wire Fences of all kinds for lawns, gardens, stock paddocks, dog kennels, Arbors for vines and fruit trees, Garden Arches, Plant Supporters, Tree Guards, Unclimbable Netting Fences, etc., also Wrought Iron Railings and Gates of all kinds for country places. Write for catalogue No. 29.

ANCHOR POST IRON WORKS

Office and Show Rooms:

15 CORTLANDT ST., NEW YORK CITY

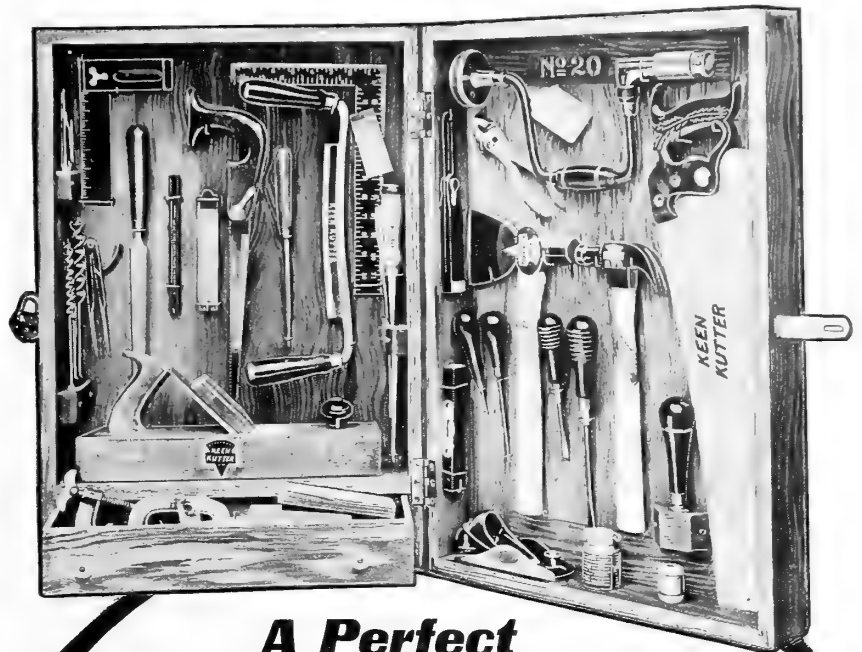


Lamps, Lanterns and Lighting Fixtures; Gates, Grilles, Fences; Fire-place Furnishings and other Work in Metal—all wrought by hand.

Illustrated matter will be promptly mailed upon request. Mention the things in which you are most interested.

ELECTRIC LANTERN
No. 10612
EACH, \$6.00
PAIR, 11.50

THE WILLIAM BAYLEY CO.
116 NORTH STREET, SPRINGFIELD, O.



A Perfect Tool Cabinet

A cabinet of well assorted tools should have a place in every home. Occasions arise daily when the right tool at the right time will save much trouble and inconvenience. A door sticks—a window gets out of order—a shade falls—a dozen things can happen that can be instantly fixed if you have a

KEEN KUTTER TOOL CABINET

which is beyond doubt the perfect tool cabinet. It contains every tool necessary for general use, and every single tool is guaranteed to be a *perfect tool*. It is the only cabinet in which all the tools are strictly high grade, every one being guaranteed by the same trade mark.

Every tool in the Keen Kutter Cabinet is a Keen Kutter, bears the Keen Kutter trade-mark and is made under the Keen Kutter motto—"The Recollection of Quality Remains Long After the Price is Forgotten." The mark and motto that for 36 years has identified a tool as standard and which covers a complete line of tools.

The Keen Kutter Line of Tools was awarded the Grand Prize at the World's Fair, St. Louis, Mo. No other line of Tools can show a similar reward.

Keen Kutter Tool Cabinets and Keen Kutter Tools are for sale by all first class dealers. It will pay you to write for a copy of our handsome book on Keen Kutter Tools. It's a book every user of tools will find useful as a permanent reference. We will mail you a copy FREE.

SIMMONS HARDWARE COMPANY,
St. Louis, Mo.
298 Broadway, New York City.



Iowa Seeds and Bulbs

Tulips, double mixed, per dozen, 25c.; single mixed, per dozen, 20c.; Crocus, mixed, per dozen, 15c.; Iris, mixed, per dozen, 15c.; a set of four Rambler Roses, white, pink, crimson and yellow, hardy plants, prepaid for 75c.; a set of four Hyacinths, white, crimson, pink and blue, sent prepaid for only 35c.; Dutch Roman Hyacinths, per dozen, mixed, only 40c.; 300 kinds of choice flower seeds for only 5c.

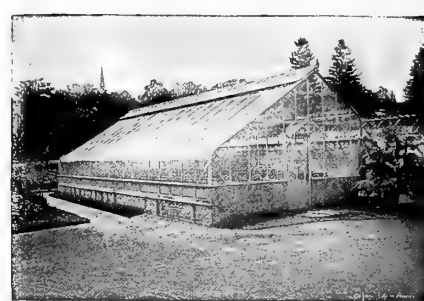
Grass Seeds Our Specialty

Address to F. C. GRAVES SEED COMPANY, DES MOINES, IOWA



For the Conservatory and Greenhouse

Seeds, Plants, and Cuttings for Winter Forcing



TRUMPET NARCISSUS (*Horsfieldii*)

BODDINGTON'S BULBS BLOOM!

The Columbia Collection—Five Hundred Bulbs for Five Dollars

(If you say where you saw this advertisement)

The following collection of bulbs contains exclusively the most showy and easily cultivated varieties—(all selected, first size and well ripened bulbs) part of which can be potted for the conservatory or window, and the balance may be planted in the garden or border for early spring flowers, and will insure the finest possible display.

- | | | |
|-----------------------------|-------------------------|--------------------------------|
| 12 Dutch Hyacinths to name | 12 Single Yellow Tulips | 50 Snowdrops |
| 15 Dutch Hyacinths to color | 25 Double Tulips mixed | 25 Anemones |
| 12 Double White Narcissus | 25 Single Tulips mixed | 25 Sweet-scented Jonquils |
| 12 Pleasant Eye Narcissus | 50 Yellow Crocus | 26 Freesias (for indoors only) |
| 12 Double Yellow Daffodils | 50 Blue Crocus | 25 Spanish Iris |
| 12 Single Red Tulips | 50 White Crocus | 25 Ixias (for indoors only) |
| 12 Single White Tulips | 25 Mixed Crocus | |

Or I will supply one-half this splendid collection, 250 bulbs, for \$2.75

My "BULB CATALOGUE," beautifully illustrated—containing a full descriptive list of QUALITY BULBS for forcing or planting out, with full cultural directions, free on application.

ARTHUR T. BODDINGTON, 342 WEST FOURTEENTH STREET
Seed and Bulb Merchant NEW YORK CITY

HOW TO GET CHRISTMAS HOUSE FLOWERS

Order immediately and you may plant for a profusion of flowers indoors at Christmas time, or put the bulbs into the ground for spring flowers from Easter to June.

\$1.00
Special this month only.

OUR SUPERB DOLLAR COLLECTION

of 50 large bulbs (more satisfactory than hundreds of small bulbs usually offered at low prices). Offering these prepaid, saving you large express charges, at the low collection price is to attract inquiries for our Autumn Catalogue. Directions for growing successfully with every package.

- | | |
|---|---|
| 2 Chinese Sacred Lilies | 2 White Calla |
| 4 Early Roman Hyacinths; white, blue, rose, red | 2 Lilium Harrisii |
| 4 Dutch Hyacinths; white, blue, rose, red | 10 Freesias, white |
| 4 Paper White Narcissus | 6 Allium Neapolitanum, white |
| 4 Golden Trumpet Narcissus | 12 Oxalis, four colors; white, rose, yellow, lavender |

Half of the collection for 60c. Six times the number for \$5.

OUR FALL CATALOGUE FREE

H. H. BERGER & COMPANY, 47 Barclay St., New York City



PURE SHEEP MANURE

A rich natural fertilizer, immediate and lasting in its effect. Unequalled for mixing with the soil for

GREENHOUSE AND INDOOR PLANTS

Try it on your late garden crops. Especially good in the vegetable garden, promoting a steady rapid growth.

10 lbs., 35c. 50 lbs., \$1.00 100 lbs., \$1.50 Per Ton, \$25.00
CAIRNSMUIR FARM - - New City, N. Y.

ORCHIDS

Largest importers and growers of ORCHIDS in the United States

LAGER & HURRELL

Orchid Growers and Importers. SUMMIT, N. J.

Carnation Support

made of galvanized wire, to take the place of the old-fashioned insect-harboring, decaying, wooden supports. It means not only economy to private or market growers, but superior quality, greater quantity.

READY FOR DELIVERY: ORDER NOW.

PRICES

The Igoe Carnation Supports

- | | |
|----------------------|--------|
| Two rings, per 100 | \$3.50 |
| Two rings, per 500 | 16.00 |
| Three rings, per 100 | 4.00 |
| Three rings, per 500 | 18.00 |

You also need some **Tying Wire** which does not rot nor unlie. No. 18, galvanized, 12 lbs. for 85c. No. 19, 12 lbs. for \$1.

The **IGOE TOMATO AND LARGE PLANT SUPPORTS** mean a more abundant crop of Tomatoes of superior quality, and more beauty and success of your heavily flowered plants, such as Peonies, Dahlias, Golden Glow, Chrysanthemums, etc. Same style as Carnation Supports, but larger. \$1.75 per dozen. \$12.50 per 100.



IGOE BROTHERS, 228 North 9th Street, Brooklyn, N. Y.

BURPEE'S SEEDS GROW

Handsome catalog, containing beautiful colored prints, directly photographed from nature, mailed FREE on request. W. ATLEE BURPEE, Seed Growers, Philadelphia, Pa.

GLADIOLI

Order now for November shipment

\$5.00 WILL PAY FOR

- 100 Bulbs of the Willow Bank Collection
- 12 Bulbs of the Golden Collection
- 12 Bulbs of the Silver Collection
- 12 Bulbs of the Diamond Collection

consisting of twelve Gladioli of all the colors of the rainbow, including the empress of them all "Virginia" the most rare and beautiful of this flower. On all orders received prior to November 15th I will ship 136 bulbs of the above varieties, charges prepaid, on receipt of \$5.00. Having sold all my stock unplanted, I will be unable to ship on further orders until the harvesting of this season's planting. Order now for next season's wants and secure the choicest selections.

STEPHEN FISH SHERMAN

Proprietor Willow Bank Nurseries, Newark, Wayne County, New York

GINSENG

seeds for sale. Send 4c. for postage and get booklet D.F., telling all about it. McDOWELL GINSENG GARDEN, JOPLIN, MO.

\$25,000.00 made from half acre. Easily grown in Garden or Farm. Roots and



"Eureka" WEED KILLER

A soluble powder readily mixed and applied for killing weeds in walks, paths, etc., without staining or disturbing the gravel. We have sold it for a number of years and can guarantee it will do the work effectually.

Large size tin, enough for 100 square yards path, 75 cts. each.

Special prices to Cemeteries and buyers in large quantities. Full directions with each tin

VAUGHAN'S SEED STORE

84-86 Randolph St., CHICAGO

14 Barclay St., NEW YORK

The New Cyclopedia OF American Horticulture

(A new and enlarged edition of the work formerly published in four volumes by The Macmillan Company)



is now in process of publication, and will soon be ready for delivery. In the meantime special inducements are offered to "Before-Publication" subscribers. Write for full particulars.

Every man or woman who cares for outdoor matters actually needs this

Cyclopedia. It will be the one great authority, containing in its six great quarto volumes 2,100 pages of:

1. Descriptions, alphabetically arranged, of all—over a thousand—of the native trees, plants and flowers worth cultivating, with keys enabling you to name any species as well as to find out all about it.
2. Fullest cultural instructions for every flower, fruit and vegetable, trees and ornamental plants you may want to grow.
3. Hundreds of elaborate articles on such subjects as the tools necessary for all sorts of work in the ground, railroad gardening, spraying, thinning, transplanting, and so on.
4. Over 4,357 articles in all, by 450 expert writers, occupying about 2,100 pages and covering 24,434 plant names.
5. 2,800 detailed illustrations, enormously increasing the ease of identification to the amateur, and 146 beautiful full-page plates.
6. An inexhaustible mine of information—from practical cultivators on culture, marketing, localities, and the horticultural capabilities of each State and section.

THE GARDEN MAGAZINE  COUNTRY LIFE IN AMERICA  THE WORLD'S WORK

DOUBLEDAY PAGE & CO. NEW YORK

CUT OFF HERE AND MAIL TO US
If You Are at All Interested
 in flower culture, permit us to send you our circular and full particulars of our present advantageous offer of the New Cyclopedia of American Horticulture. Please write very plainly your name in full:

 and your address:

A C E-270-M



JAPANESE TREE Peonies

☞ We have the finest collection of these handsome plants that were ever imported. They should be grown in every garden; the flowers measure 6 to eight inches in diameter, and range in color from the most delicate pink to the brightest scarlet, lavender, maroon, pure white and delicate lavender. They are very hardy and will stand our severest winters.

Price each, \$1.25. Per Dozen, \$12.00. Collection, 20 varieties, \$18.00

Delivered free anywhere in the United States

----- USE THIS ORDER BLANK -----

STUMPP & WALTER CO.

50 Barclay Street, New York.

Enclosed find \$..... Please send me

.....Japanese Tree Peonies.

.....Hardy Herbaceous Peonies.

Hardy Herbaceous Peonies

In 12 varieties, large clumps that if planted this fall will flower next spring,

60 cents each. \$6.00 per dozen

Small roots that with proper cultivation should flower next year, in collections of 12 named varieties,

25 cents each. \$2.75 per dozen

Delivered free anywhere in the United States

Our illustrated catalogue of Flower and Grass Seeds, Bulbs, Plants and Implements, also giving full descriptions of varieties of Peonies listed above, mailed free.

STUMPP & WALTER CO.

50 Barclay Street, NEW YORK

SIEBRECHT'S PEONIES

bloom the first season. Order now for September planting. Select at the same time your other stock for Fall planting from our fine catalogue "BEAUTIFYING COUNTRY GROUNDS." It's yours on request.

SIEBRECHT & SON, Rose Hill Nurseries, New Rochelle, N. Y.

New York Office, 425 5th Ave.

AN OCULAR DEMONSTRATION

HARDY PERENNIAL PHLOX

For summer blooming there is no other hardy flower so attractive and has such diversity of color as

HARDY PERENNIAL PHLOX

Our prize collection (several acres in extent) consists of the newest and best standard sorts to date.

To those unable to visit our Nurseries and see the mass of colors they represent when growing we will send a box carefully packed, by express, prepaid, containing cut blooms of at least 25 varieties correctly named, to select from on receipt of 12 2-cent postage stamps to part pay cost of transportation.



The Garden Magazine.

DAHLIAS

Another of our specialties, can be selected in the same manner.

CLUCAS & BODDINGTON CO., 131 West 23rd Street, N. Y. CITY
PALISADE NURSERIES, Sparkill, N. Y., Importers, Exporters and Growers of Seeds, Bulbs and Plants



BONORA

NATURE'S NEW PLANT FOOD

Simply marvellous in its results. Gives new life to all growing plants. Use **BONORA** now on all "Catch crops" and force them to a strong, healthy maturity before cold weather sets in. Use **BONORA** now on

SUN BAKED LAWNS

and produce a vigorous new growth. Use **BONORA** now on all flowering plants and increase the number and size of the blossoms.

BONORA is a highly concentrated (must be diluted with 100 parts water for use) fertilizer and plant food, containing the elements necessary to plant life. **BONORA**, being without odor, is the *only* fertilizer to use for indoor and greenhouse work. **BONORA** is used on the Capitol Grounds at Washington, in all the Parks of Greater New York and on many of the finest country estates throughout the United States.

Sold in 1, 2, 5 and 10 gal. kegs, at \$2 per gal.

Send orders to New York office. Results guaranteed.

Laboratory and Factory, Kearney, N. J.

BONORA CHEMICAL CO.

584 Broadway, - New York City



PULVERIZED SHEEP MANURE

One barrel of Dormant Sod Brand Pulverized Sheep Manure

is equal in fertilizing strength—will go further and is more satisfactory than two wagon loads of barnyard manure for garden and lawn. No waste, no odor, no refuse to blow about or rake up.



Fall and Spring are best times to put down Sheep Manure and get results desired.

Full barrel Pulverized Sheep Manure delivered, freight prepaid to any point in the U. S. east of Denver \$4.00. Remittance must accompany order. Write for quantity prices and booklet.

Dormant Sod Co.
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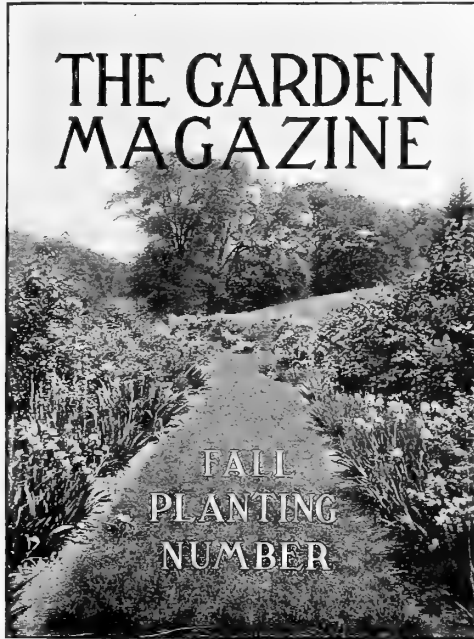
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About the October Double Planting Number

EXPERIENCE has taught us that, at certain seasons of the year, a number devoted largely to a single subject has great value and usefulness. The Spring Planting Number of THE GARDEN MAGAZINE, published in April, was vastly successful, and copies were practically unobtainable immediately after publication. A second successful number was the Evergreen Issue of August, which covered with such thoroughness as a single number could the selection, care and planting of evergreens.

The October number of THE GARDEN MAGAZINE will be a double number devoted to the fall planting of fruits, trees, shrubs, vines, hardy perennials and bulbs. Every year a cry goes up for a full, fair and expert statement of the fall-planting problem. The American people spend about \$2,000,000 every autumn on bulbs alone, and probably several millions more on other plants. While the movement is growing (since the advantages of fall planting are often very great), there has been a good deal of disappointment and loss from planting peaches, evergreens, roses, and other plants under unsuitable



THE BEAUTIFUL THREE-COLOR COVER FOR OCTOBER

circumstances. We propose to tell fully and frankly what cannot be planted in the autumn and why. Experts, in all parts of the country, will show what can be surely gained and what is too risky.

We believe that this number will establish a high-water mark in the literature of American gardening. From the three-color cover, which represents six months of effort, to the little article which tells how to "fool the frost" and extend the garden season from two to six weeks, every article is designed to be better than anything we have ever done. The bulb articles, alone, set a new standard, and the elaborate series of pictures show these plants in all their stages of growth. This special issue will be 25 cents, but it and the other special numbers will be included in a year's subscription for \$1.

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VOL. II.—No. 2
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SEPTEMBER, 1905

ONE DOLLAR A YEAR
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Wilhelm Miller, Editor *Cover design by Henry Troth* *Doubleday, Page & Company, 133-137 East 16th St., New York*

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A Month of Harvest

IT'S a time to sit down and enjoy the results of one's spring and summer work. The tree fruits are ready to eat and to can. So are the main crop vegetables. It is cider time, too.

Resolve to begin earlier next year. Begin now! Plant out a few more apples and pears, another row of currants or gooseberries. But don't do either on wet land.

THE OUTPOST OF WINTER

About the middle of the month the first frosts are due. Stretching cheesecloth over the tender plants of the flower garden will often save them for the Indian summer. It's worth trying.

Coleus, cannas and dahlias are specially sensitive, and if they overcome the first cold snaps may yet flourish all through October.

VEGETABLES FOR SEPTEMBER SOWING

It is well worth while to make a few sowings for late crops. Even if they don't all mature, what's the odds? Seeds are cheap,

and if the crops are a success, what satisfaction is yours! During the month sow:

- Cabbage, to winter young plants for next spring.
- Cauliflower, to winter young plants for next spring.
- Chicory.
- Chervil.
- Corn salad, for wintering outdoors.
- Endive.
- Lettuce, once.
- Turnips, before the 15th.
- Radish, twice.
- Spinach, in frames for Christmas, about September 1st.

Lettuce will be fit for use in October and later. Or sow in coldframes and follow with spinach as the lettuce is gathered. Cabbage and cauliflower sown in frames now will give stronger and sturdier plants for early planting next year: far better than from spring-sown seed in heat.

IF YOU HAVE A GREENHOUSE

Overhaul and put every part in good condition before the end of the month. Repair broken glass. Paint the woodwork. Fix leaks in pipes. Get ready to turn on the heat at any time. Get in a supply of tobacco stems for winter use against insects.

Why not try to raise a few vegetables to follow the garden crops? Beans sown just after the middle of the month will be ready in seven weeks. Beans are easy to grow. Give good, moist soil and it need not be watered again until the plants are well above ground.

Sow cyclamen and cineraria about September 15th, and keep them cool during the daytime. Take "stock" cuttings of tender

bedding plants that you want in quantity next year. Propagate from these in spring.

SAVE THE VEGETABLES

At the first touch of frost gather all the remaining fruit from the tomato and eggplants. They will ripen in a dry cellar. Beans will yield longer if the pods are gathered regularly. Gently pull up the poles supporting the limas and lay them down in the rows—vines and all. Gather the pods while still green, and put some covering material alongside the rows ready to put over the vines on frosty nights.

Lift some parsley roots from the border, and replant in the coldframe for winter supply. Earth up celery. Don't let frost injure winter squash. Dig potatoes. Transplant lettuce to hotbeds or coldframe. Plant out hardy perennial onions for bunching in spring. Cultivate. Keep down weeds.

A BUSY TIME IN THE BORDER

The Dutch bulbs are ready in the early part of the month, so get the dealers' catalogues. By all means plant peonies. They simply *must* be planted in September if they are to flower next June.

Fill up gaps among the perennials by moving or dividing large clumps of peony, phlox, monarda, Funkia, rudbeckia. Buy extra plants from the nurseries and get them well rooted before winter sets in.

Sow flower seeds indoors for the winter window garden; or dig up a few plants of petunia, phlox or sweet tobacco and plant in boxes or pots for winter flower indoors.

During the latter part of the month new lawns may be seeded on well prepared, thoroughly drained land and on sandy soil; otherwise wait until spring.

How to Have Flowers Earlier Next Spring—By James T. Scott New York

GETTING SIX MONTHS AHEAD OF THE SEASON—HOW TO HAVE BIENNIALS AND PERENNIALS IN BLOOM NEXT SUMMER BEFORE SPRING-SOWN PLANTS HAVE GROWN TO FLOWERING SIZE

Photograph by HENRY TROTH

SOWING seeds in the fall is the surest and easiest way for the amateur to have an abundance of early flowers. There are, however, certain simple precautions to be taken. The seedlings must be sheltered from hot sunshine and the soil must be loose and moist.

Soil.—Prepare the seedbed well (not necessarily making it rich) by forking it over and over to the depth of at least one foot. Rake off and level thoroughly; add one and one-half inches of finely sifted soil on top. Seeds germinate best in a soil of fine tilth.

Watering.—Late in the afternoon draw lines for the seeds, and then give the bed a thorough watering through a spray. Be careful not to obliterate the lines. Allow it to stand thus overnight. Next morning sow the seeds and cover with sifted soil to the desired depth. Generally this watering will suffice until the seedlings appear; but, should the bed become dry, spray again. Young seedlings are very easily destroyed with a heavy spray, and if they are watered in the

morning and the sun comes out hot, they are sure to “damp off.” Therefore water late in the afternoon, but not so late that the water will still be hanging on the leaves next morning. Between four and five o’clock is a good time, or, say, from an hour to an hour and a half before sundown.

Protection.—Sow all seeds (and also prick off) in a sashbed or coldframe, if possible. Failing this, sow in a sheltered position where they are protected from the noonday sun. If sown in a sashbed or frame, put on the sash, tilting them well at the back, and cover the glass with some light material during the day (removing it at night) until the seedlings appear. If sown in the open border or in flats, seeds will germinate better when covered with heavy paper or a single fold of ordinary bagging material.

Small seeds require greater protection and more care during germination than larger ones. They may be sown above ground, given protection and covered over lightly when they begin to show life.

Large seeds.—Large seeds can be sown with safety in the open. They will germinate more quickly if soaked in water for twenty-four hours before sowing.

Pricking off.—Transplant the seedlings as soon as they have made their first two rough leaves. Use a pointed dipper and make the hole large enough in every case to easily hold the roots. Firm the soil thoroughly by pressing in the dipper about one inch from the original hole. Never firm close around, as you are liable to “hang” the young plants. If the roots are thus firmed subsequent watering will settle the upper soil about the “neck.” In pressing close to the tender stem with the fingers you are liable to do injury; moreover, the soil gets baked and the seedlings cannot grow. When two or three lines are done give water and shade. Keep them shaded for several days until growth commences again. Gradually immure them to full sunlight.

Weeks of bloom.—The minimum time is given in the table below:

NAME OF FLOWER	TIME TO SOW	HEIGHT (inches)	COLOR OF FLOWER	DISTANCE TO PLANT (inches)		DEPTH TO SOW (inches)	MONTH OF FIRST FLOWERING	WEEKS IN BLOOM	SOIL PREFERENCES, BEST SITUATIONS, AND OTHER POINTS
				Pricking Out	Permanent Planting				
<i>Achillea filipendulina</i>	Aug. 15	36-42	yellow	2	15	1-16	July and Aug.	4-6	Needs staking. All achilleas grow in dry or moist soils.
<i>Achillea Millefolium</i>	Aug. 15	18-24	white, pink	2	12	1-16	July and Aug.	6-8	Borders and rockeries. Increase by division in spring.
<i>Achillea Ptarmica</i>	Aug. 15	18-24	white	2	12	1-16	July	all sum.	For border planting and for cut flowers. Best variety The Pearl.
<i>Aconitum Napellus</i>	Aug. 15-20	48	blue	4	18-24	1-4	June	4-6	Shady places and shrubbery. Roots and leaves poisonous.
<i>Anemone Japonica</i>	Aug. 15	24	white, pink	3	18	1-4	Aug.	6-8	Especially suited to fern groups or shady borders. Rich soil.
<i>Anthemis tinctoria</i>	Aug. 15	18-24	yellow	2	12	1-16	July	4-6	Any soil in full sun. Golden Marguerite. Pungent odor.
<i>Aquilegia chrysantha and cærulea</i>	Aug. 15-20	18-34	blue, yellow, white	2-3	9-12	1-16	May, June	8-10	Plant in shady places. Many hybrids in mixed colors.
<i>Arabis alpina</i>	Aug. 15	6	white	3	6	1-4	May, Sept.	4-8	Rock cress. Dry soil in sun. Plant in tulip beds.
<i>Asclepias incarnata</i>	Aug. 15	36	rose	4	18	1-4	July	4	Swamp milkweed. Plant in swampy places or meadowlands.
<i>Asperula odorata</i>	Sept. 1	12	white	2	8	1-16	June	8-10	Shady places as undergrowth. Used for flavoring May wine.
<i>Aster alpinus, grandiflorus, Novæ-Angliæ</i>	Sept. 1	18-36	blue	3	18-24	1-4	Sept.	8-10	Best of all fall flowers. Good in all soils, but repay cultivation.
<i>Bocconia cordata</i>	Aug. 15-20	36	white	2	24	1-4	July	4-8	Beautiful in foliage and flower. Shrubbery beds or woodland corners.
<i>Campanula Carpatica, Medium, etc.</i>	Sept. 1	6-36	blue, white	3	15-18	1-4	May	8-12	<i>Carpatica</i> and <i>rotundifolia</i> good for rockeries. Others best in shade.
<i>Centaurea (Sweet Sultan)</i>	Aug. 15	18-24	yellow, white, purple	3-4	12-18	1-4	May	4-8	For sandy dry soil. Effective in solid beds of one color or mixed.



64. EARLY SPRING FLOWERS FROM SUMMER-SOWN SEED

Much time is gained by sowing seeds of many hardy plants in August or September. If germinated and grown in a coldframe, protected from the extreme cold of winter, the plants will give flowers next spring or summer, long before those sown at the same time in the garden. Six months will be gained with biennials and perennials. The plants shown here are Gold-laced polyanthus (*Primula polyantha* of gardens)

How to Have Flowers Earlier Next Spring—*Continued*

NAME OF FLOWER	TIME TO SOW	HEIGHT (inches)	COLOR OF FLOWER	DISTANCE TO PLANT (inches)		DEPTH TO SOW (inches)	MONTH OF FIRST FLOWERING	WEEKS IN BLOOM	SOIL PREFERENCES, BEST SITUATIONS, AND OTHER POINTS
				Pricking Out	Permanent Planting				
Coreopsis grandiflora	Aug. 15	24-30	yellow	3	12-18	1-4	June	8-12	The perennial tickseed. One of the best herbaceous plants for cut flowers.
Daisy (Bellis perennis)	Aug. 15-20	6-8	white, rose, streaked	3	8-10	1-4	Easter	8-10	For edging and vases. Get named varieties: Longfellow, Snowball, Maxima.
Delphinium formosum, belladonna, Cashmerianum, etc.	Aug. 15-20	18-36	blue	4	18-24	1-2	June	12-16	Best tall blue flowers. Plant among shrubs. Belladonna, new ever-blooming.
Dictamnus albus	Aug. 15-20	24	red, white	3	18	1-4	June	4-6	For borders. Gas plant. Nursery name <i>D. Fraxinella</i> .
Doronicum plantagineum	Sept. 1	24	yellow	3	18	1-4	May	4-6	Variety <i>excelsum</i> , more robust, is most commonly grown. Rich loam.
Eryngium giganteum	Aug. 15	24	blue	3	18	1-2	June	6-8	Sea holly. Beautiful blue leaves in spring.
Forget-me-not (Myosotis)	Aug. 15	10-12	blue, white	3	10-12	1-4	April	most of sum.	Plant <i>M. palustris</i> in moist places, <i>M. dissitiflora</i> for border.
Foxglove (Digitalis)	Aug. 15	24-36	white, rose and purple	4	15-18	1-4	June	4-6	Shady moist or open places. Variety <i>gloxiniæflora</i> very robust.
Gaillardia aristata	Aug. 15-20	18-24	yellow	3	15-18	1-4	June	8-10	<i>G. grandiflora</i> of the nurseries.
Gypsophila paniculata	Aug. 15-20	18-24	white	3	15	1-4	July	8-10	Baby's breath. Fine for rockeries. Flowers persistent.
Heuchera sanguinea	Aug. 15-20	15	crimson	3	15	1-4	June	6-18	Coral bells. Border plant. Grows in all kinds of soil.
Hollyhock	July 15	48-54	white, yellow, rose, purple	4	18-24	1-2	August	6-8	Sow every year. Young plants bloom best.
Iberis sempervirens	Aug. 15-20	9-12	white	2-3	9-12	1-4	May	8-10	Candytuft. Best of all white flowers for rockeries.
Lobelia cardinalis	Sept. 1	48	carmine	3	15-18	1-4	July	4	Open border or moist places. Queen Victoria is <i>L. fulgens</i> .
Lupinus polyphyllus	Aug. 15-20	48	blue	4	24-30	1-2	June	6-8	Will not transplant well when once established.
Lychnis Chalcedonica, Haageana, Viscaria	Aug. 15-20	48	scarlet	3	12	1-4	June	4-6	Excellent in "old-fashioned" gardens. Can be increased by division.
Lychnis Coronaria	Sept. 1	24	rose	3	12-18	1-4	June	4-6	Rose champion. Downy foliage. Naturalize in dry places.
Oenothera biennis (Evening primrose)	Aug. 15	36-42	yellow	2	18	1-8	July	6-8	Flowers open suddenly at dusk. Roots eaten like salsify.
Pansy	Aug. 15-20	8-10	blue, yellow, white, mottled	4	10-12	1-4	March in frames	8-10	Shady places for summer bloom. Get Bugnot's, Cassier's, Mme. Perret strains.
Pentstemon barbatus	Aug. 15-20	36-42	pink to red	2	15	1-16	July	4-6	<i>Cbelone barbatus</i> of gardens. One of the best border plants.
Platycodon grandiflorum	Sept. 1	18	blue, white	3	15	1-4	June	4-6	Chinese bellflower. Medium sandy loam, well drained.
Polyanthus, gold laced	Aug. 15	8-10	creamy white to maroon	1½	6-8	1-6	May	8-10	For shady borders. Will not stand direct summer sunshine. Best in frames.
Poppy, Papaver bracteatum, orientale, nudicaule	Sept. 1	9-24	yellow, scarlet	2-4	6-18	1-16	April, May	4-8	<i>P. nudicaule</i> in rockeries. Others open border and shrubbery.
Primula vulgaris	Aug. 15	6-8	yellow	1½	6-8	1-16	April	6	Primrose. Naturalize in woods. Protect slightly with leaves in winter.
Pyrethrum	Aug. 15-20	18	white, pink	3	12	1-4	June	6-8	<i>Chrysanthemum coccineum</i> (<i>P. roseum</i> of gardens). Numerous varieties.
Stokesia cyanea (Stokes's aster)	Aug. 15-20	15	blue	5	15	1-4	May	24	Well-drained sandy loam. Hardy. Flowers till frost.
Sweet William	Aug. 15-20	12-18	blue	3	12-18	1-4	June	6-8	Old-fashioned Sweet William. Fragrant. Single and double varieties.

Cucumbers and Melons for Summer Use—By E. L. Fullerton Long Is. and

HOW TO HAVE TENDER, DIGESTIBLE CUCUMBERS, AND SWEET, JUICY MELONS INSTEAD OF THE TOUGH, FLAVORLESS THINGS COMMONLY MET—VARIOUS WAYS OF SERVING AND OF PRESERVING FOR FUTURE USE

Photographs by H. B. FULLERTON

IN the full heat of the midsummer the watery, cool cucumber or the sugary melon is the most welcome "fruit" of our garden. It seems odd that the fleshy cucumber should be called a vegetable, when we always think of the same formation in the melon, its true cousin, as "fruit." The distinction after all is purely in flavor, and judging from some experiences we have had, the melons of some people do not deserve to be thus distinguished.

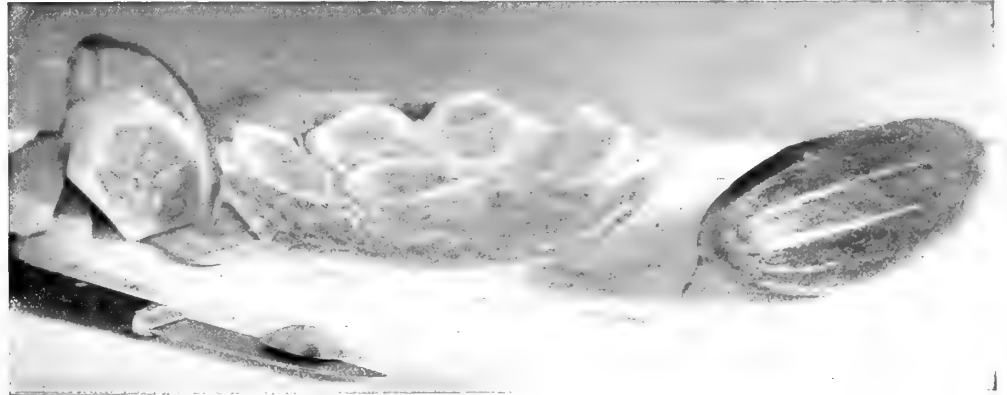
Both these groups are raised in exactly the same way, either in hills or around a sunken barrel. They may also be started in pots, cans, berry boxes, etc., or in a piece of sod in the coldframe, and transferred to the garden about the middle of May, by which means we cheat the season.

There are several distinct types of cucumber—long, short, smooth, spiny; trailing and climbing; white skinned and green skinned. Some varieties are raised for pickling; others to be sliced for table use. The pickling cucumbers or gherkins are gathered when quite young. For brine pickles a larger size is gathered. For ordinary pickling gather the young cucumbers when about one and one-half or two inches long, place them in a stone jar and cover with boiling hot brine strong enough to float an egg. Let them stand for twenty-four hours; then drain, wipe dry, place in a clean jar and cover with one quart of boiling vinegar, to which has been added one onion, twelve whole cloves, one ounce of mustard seed, and three blades

of mace. In two weeks' time they are ready to use.

I know you will say just the same thing that I said when the cucumbers for pickling came in at the rate of three, four, or perhaps a dozen a day. "What, stop my work and

than the crock, and a good-sized stone to hold it down snugly. The next pickles that came to the house were added to the jar. By the time the crock was full a little water was poured in if the brine did not cover the cucumbers. A cloth was laid over the top,



65. The fascination of the cucumber is its youth; when old the flesh gets tough and bitter and the seeds get hard. Remove the bitter skin, slice and drain in a cool place before serving

pickles those few paltry things each day? Never! The game is not worth the candle." But try it and see. It is done a little at a time; thus it is hardly appreciated. Take a stone crock, cover the bottom with cucumbers and cover these with one-quarter of an inch of coarse salt; then put in another layer of cucumbers, another of salt, and so on until the cucumbers are used up. On top place a round board, just a trifle smaller

the board replaced with its weight and the outfit stored away until a convenient time for pickling came. A few horseradish leaves placed under the cloth prevented molding, and the pickles would keep thus for months, even for years.

When the psychological moment arrives you may pickle all of your hoard of cucumbers, or only part of them, as you wish, proceeding thus: Remove the stone, the board and the cloth, wipe the scum from the surface of the brine and around the edges of the crock and wash the cloth and board. Remove such cucumbers as you wish to pickle, replace the coverings, and the rest will keep for another pickling bee.

Cover the subjects for execution with cold water; soak them three days, changing the water every day, and carefully wipe each one before dropping them into the preserving kettle, which contains enough vinegar to cover the cucumbers. Heat to the boiling point and turn occasionally. Do not cook the pickles, just heat them through, then remove from the vinegar, place in bottles and cover with fresh, cold vinegar, which may be spiced or not. Table cucumbers are usually served raw, although they may be cooked in divers ways. Always pick them in the early morning, and keep them in a cool, dark place. An hour before serving pare off the skin, slice as thin as possible and place in ice-cold water. Drain thoroughly when ready to carry to the table.

Fried cucumber can scarcely be distinguished from fried eggplant, and it is prepared in the same way, by paring the



66. Summer "squash," tender and delicate in flavor, are really pumpkins. This variety is the pattypan, one of the most esteemed. The Hubbard and Turban are types of the true squash

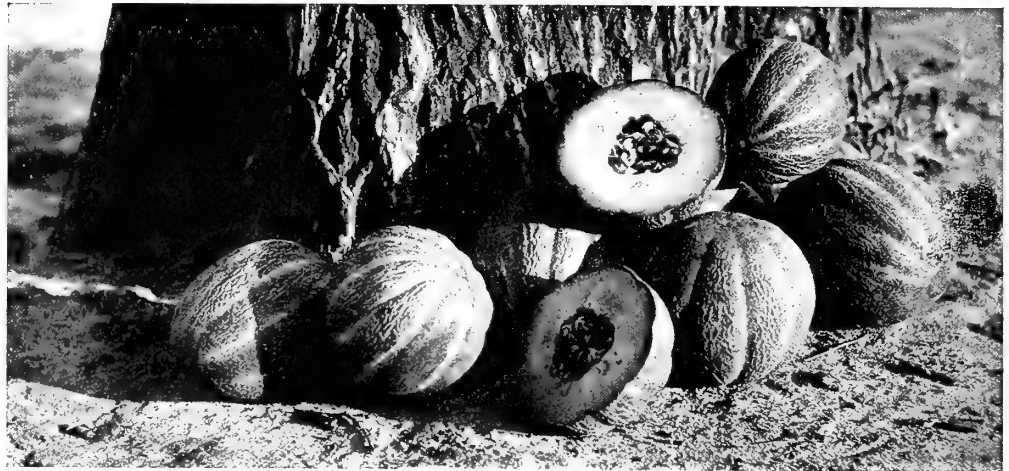
"seed pod," cutting it into slices about one-half an inch thick, dipping into egg which has been slightly beaten, then into cracker crumbs which have previously had a little salt and pepper mixed with them. Fry the slices in deep, hot fat, drain on paper, and they are ready to serve.

They may be stuffed with bread crumbs and chopped nuts highly seasoned, or with chopped raw meat in place of the bread. The cucumber is cut in half, the seeds scooped out and replaced by the selected mixture, the halves put together again and tied with string. They are then baked an hour and a half or until tender. Cucumbers may also be served boiled, covered with cream sauce, in which case the skin and seeds should be removed. They form in this way an excellent substitute for boiled onions.

ALL KINDS OF SQUASHES AND PUMPKINS

Squash makes one of the most delightful and dainty of summer dishes, in our estimation. They are fleeting and delicate in flavor and texture, provided you secure the proper varieties. Crooknecks and yellow squashes are generally strong in flavor, while patty-pans, vegetable marrow, and others of that type are extremely delicate.

Their culture is exactly the same as watermelon, even to the spacing of the hills; and their enemies are the same. An interesting



67. The netted melons or muskmelons are the sweetest of all the gourd or cucumber family, so we call them fruits. Plenty of sunshine is essential to high flavor. Canteloupes are warty-skinned melons

fact in regard to all these vine fruit-vegetables is that some flowers are male, while others on the same stem may be female. It is possible to have fine, healthy, strong vines which will not produce a single seed pod, if there have not been bees or insects near your vines to fertilize the flowers. The two blossoms are quite distinct, the female having a tiny bulb on the stem behind the calyx, while the male has not. If the pollen is carried from one to the other the bulb grows and develops, the flower in front of it falling off; but if

not fertilized the bulb as well as the blossom separates from the stem.

THE ENGLISHMAN'S FAVORITE

To me the finest of all the summer squashes are the pattypan and the vegetable marrow, the latter a favorite English variety, which is not generally appreciated in this country because we don't know when to eat it. We let it get too old.

Vegetable marrow squash may be peeled, cut into small pieces, the seed part removed



68. The vegetable marrow (a pumpkin) must be gathered quite young before the seeds are hard. Most people let them get too old, and then wonder why others like them. There are white and mottled green varieties, but the former are considered the more delicate in flavor

and thrown away. Drop the prepared pieces into salt water, and cook until very tender. All should then be thoroughly drained and pressed through a colander. Returned to the pan in which it was boiled, it should be set on the back of the stove, uncovered, and allowed to steam. Add a teaspoonful of butter and a dash of pepper before serving. It will not suit an Englishman's palate unless it is served up piping hot. They may also be baked, fried, stewed with cream sauce, or prepared by any of the recipes for cucumbers. They are long and slender, rather greenish, and so extremely tender and tasty that they are becoming quite the rage.

The usual winter squashes include Hubbard, Marblehead, and Boston marrow. They grow to an enormous size, weighing more than a watermelon, and will keep in the cellar all winter, provided they are not subjected to a temperature lower than 50°.

Pumpkins are sisters to the summer squash. They are richer in flavor and are usually preferred for custards and pies, though they may be baked or boiled, prepared in the same way as any other vegetable. They can also be dried for winter use by being cut into thin strips and hung in the sun, then packed in tin boxes or glass jars. Soak these dried pieces in cold water over night and they will be ready to use.

RADISHES AS NURSES FOR MELONS

Muskmelons and watermelons are two of the most delicious "fruits" of the vegetable garden. They are both of goodly size, especially the latter, which sometimes weighs forty to fifty pounds when grown in the South. Muskmelons are more frequently raised in the home garden than watermelons, for the simple reason that they occupy less room. When the weather is warm and the leaves well out upon the trees—not before—make the melon beds, which should be three feet apart. Dig out a hole, four inches deep and twelve inches across, and place into it fine old manure full of humus, some bone meal and wood ashes, or hen manure, until level with the surrounding soil. Put three or four inches of soil over this and plant the seed, fifteen or twenty of them, together with some radish seed. Why? Because melons are slow of germination compared with radishes; the striped and the flea beetle love both, but if they can feast on radish leaves they will let the melons alone, so that the poor radishes can be used as cat's paws! When the melon seedlings are well up, thin so as to leave only the three finest plants in the hill. The striped beetle will now make a prolonged call unless made unhappy by Bordeaux. Invite him to move on, by means of this compound, and you will find that mildew also scarcely rings the bell.

The best fruit comes on the side branches, so we pinch off the ends of the runners to force side growth. Do not let the vines grow much more than two feet long without pinching. If allowed to run they will quickly cover an incredible space, but you won't get any more fruit, nor so good. Melons require plenty of water, as they are really a forced crop in this part of the country. If you



69. There are pumpkins and squashes of all sizes and forms. The terms are often used indiscriminately. The pumpkin is distinguished by a hard and deeply furrowed stalk. Squashes have spongy, soft and unridged stalks. The so-called crookneck squashes have pumpkin-like stalks swollen next the fruit

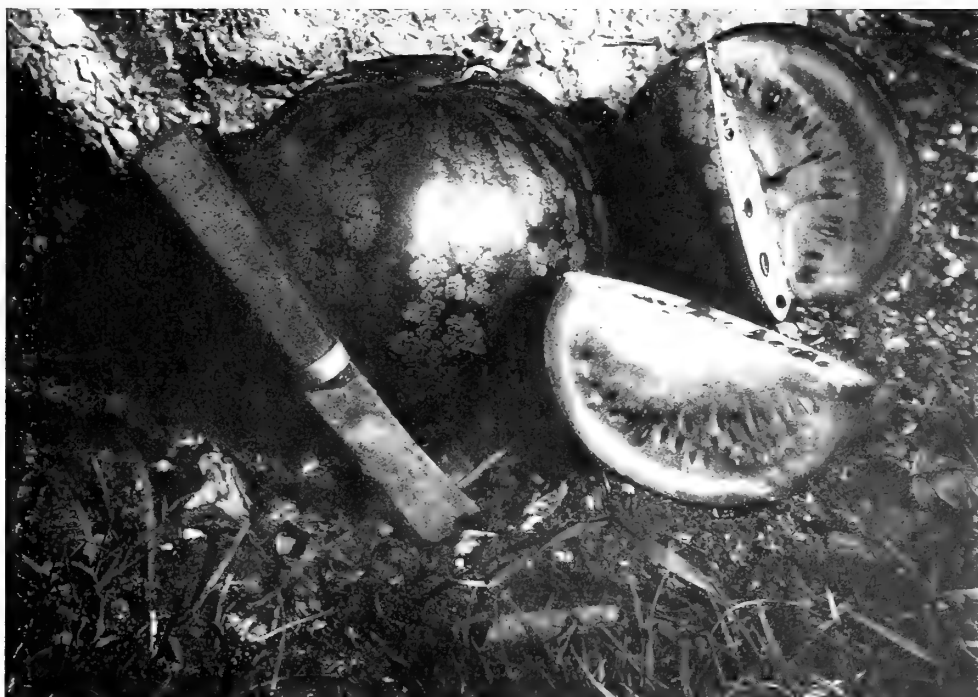
plant them in hills make a slight ditch around each and fill this with water every night or every other night. When the melon is ripe it parts from the stem with slight assistance, and the finest flavored fruit is that ripened on the vine. When the melons have set place a board under them.

WHEN A WATERMELON IS RIPE

Watermelons are raised in exactly the same way, by placing the hills four or six feet

apart, and allowing but one vine to remain to a hill. The best test for a ripe watermelon is to place the ear close to it, then press hard with the hand, and if the fruit is ripe it will yield slightly, and a cracking sound will be heard. Tap it with the fingers, and if the sound is hollow it is ripe.

There is but little waste to a watermelon, for the white part of the rind, pickled in sugar, vinegar and spices, makes a very acceptable dish to serve with meats.



70. There are two types of watermelon. The one tender and juicy; the other, or citron type, is hard fleshed and is preserved as a substitute for citron peel. To test for ripeness press hard with the hand, placing the ear close to the watermelon; a cracking sound indicates it is ready to gather

Ether Forcing Without a Greenhouse—By Flora L. Marble Pennsylvania

AN EASY WAY FOR THE AMATEUR TO BLOOM AZALEAS, LILACS, AND OTHER PLANTS AT CHRISTMAS TIME—GREAT OPPORTUNITY FOR THE WINDOW GARDENER TO DISCOUNT THE SEASONS

Photographs by the author

SUCCESS crowned our attempt at forcing by ether. We had flowers for Christmas just like those of the stores which had been forced by the expensive florist's greenhouse, heated by steam or water. Our apparatus was only a little bottle of ether, an old washboiler for small plants, and an old-fashioned chest for the shrubs. Actual cash outlay? Fifteen cents a plant! After the ether treatment the plants were subject to all the discomforts that commonly fall to the lot of house plants during winter.

THE IMPROVISED FORCING CHAMBER

The old-fashioned chest, with dovetailed corners and double boards on the sides and bottom, was lined with heavy paper and all suggestions of cracks were filled with putty. The lid was removed, and the chest was placed upside down on the cellar floor and banked around with earth. A hole was drilled for the funnel through which the ether was poured. Inside was a sponge and a small basin under the sponge to hold the ether, while the sponge continually soaked it up and aided evaporation. This chest contained about fifty-six gallons space and we used four ounces of ether for the dope—that is the approved ratio. The hole was tightly plugged after the funnel was withdrawn.

We chose for our experiment two azaleas, *Vervaniana* and *Simon Mardner*; two lilacs, *Marie le Gray* and *Charles X.*; two deutzias.

November 4th the plants arrived from the nursery. They were potted at once in dry earth—that is important, *dry earth*—and put under the chest packed like cordwood, their branches still tied and cloth bound about the pots to hold the soil. The ether



71. The white flowering deutzia will surely respond to the ether treatment for forcing. These plants are not generally grown by the florist for Christmas

was poured in and the plants remained for seventy-two hours. What a sorry sight as they were removed from the "forcing chest!" These plants that were to be a joy at Christmas—and it was already November 7th!

The lilac, *Marie le Gray*, a bare shrub, looked unaltered, but there was a smell of ether about the dirt when it was watered that was hopeful.

The other lilac, *Charles X.*, is notoriously hard to force. So it was left dry and be-wrapped on the cellar floor to rest a couple of days before going into the chest for another dose of ether.

Look at the azaleas! *Vervaniana*, that had been of so shiny a green when put in the chest, now had the lower leaves a rich crimson, while the top of the plant remained green—as our sumach does in the fall. It followed the lilac upstairs. *Simon Mardner* showed no signs of a change of heart, so we put it back to rest with the *Charles X.* lilac. One of the deutzias was watered and sent to join the promising ones; the other was wrapped up and treated once more.

Then we began to quake. Finally we did the thing only half way, which is very foolish, always. *Charles X.*, *Simon Mardner*, and the deutzia were put back in the chest bravely enough, but when we came to pour in the ether we stopped at two ounces.

On the evening of the 12th, having been in the chest three days, these plants were once more brought into fresh air and daylight. The lilac and deutzia were in no wise altered, but *Simon Mardner* had folded its small green leaves close to the branches—as a clover plant will at night.

WATCHING THE THINGS GROW

Azalea Vervaniana began to lose the crimson leaves, and many of the green leaves fell



72. The normal violet plant went to rest in the window in early winter and by January was standing still—last year's leaves withered and a new growth just starting. By March this plant had not grown more than an inch



73. The violet plant that was put into the forcing chest on October 28th for seventy-two hours was sorry looking when it came out. It dropped the old leaves, but soon made a new start. It flowered in March

off. This dropping of the foliage continued until December 3d, when the plant began to grow like a miracle. The flower buds, that had been nestling in the tips of the branches, swelled and doffed the russet caps that cover their pink glory. December 13th found the first blossom fully open. By Christmas time the plant was a thing to marvel at. The flowers were large and perfect, crowding each other in the shape of an old-fashioned bouquet, and the plant was beautiful all through January, when it was cut back, to make a new growth for next season.

After it had been upstairs a day or so, azalea Simon Mardner waked up and straightened out its folded leaves and many of them fell off. The flower buds showed color on December 15th, and after that the plant took up a great pace, and by Christmas time most of the flowers were fully open. They are just the color of the American Beauty rose, having a richness of tone that *Vervaniana* lacks; but, for all of that, we prefer the pale pink of the latter. *Vervaniana* rather likes sunshine, and will live comfortably in a warm room. Simon Mardner, on the other hand, hates sunshine even more than artificial heat. In spite of being too warm sometimes, it kept its good looks through January, but by the middle of February was dead. Dead from overwork and rush no doubt.

Our most delightful success was with the *Marie le Gray* lilac. In four days the leaf buds began to swell. The first week in December the white flowers began to unfold; by the 10th of the month the flowers were full blown, and hung there, unchanging, to the last day of the month.

We have different things to say of *Charles X.* The person who christened it must have known what the history books say of that French *Charles X.*: "His policy was bigoted and reactionary. It excited much



74. Azaleas for Christmas were forced at a total cost of ninety cents each. *Vervaniana* was successful with one treatment. Simon Mardner needed two. The soil must be dry before etherizing is begun

discontent." Of no *Charles X.* was this remark ever more true than of the one who occupied our sunny window after November 12th. It came into leaf, but the flowers never developed.

The *deutzias* remained unpromising until about December 3d, when a faint show of green could be detected along the branches of the plant that had had two treatments. The other remained dormant. By Christmas Day all the lower flowers were in full bloom, while those at the tips of the branches were still tiny buds. The leaves did not grow much until the flowers were out. The photographs were taken at Christmas time to show the relative condition.

All the plants had the same treatment from the time the dopes ended. They were taken to the third floor, where the hall widens out into what we call the sun parlor. Here the windows face south and east and west. The light is diffused and there are no drafts. At night the temperature would often go down to 35° or 40°. On a few very cold nights we huddled our patients about the radiator, with a screen around them to keep off the cold air which might come up the stairway. In the daytime the temperature averaged about 65°, sometimes climbing up to 70°.

When the plants were beginning to bloom they were watered every four or five days with weak manure water. There was a great difference in the thirst of the various plants. Water them when the soil on top gets dry, not before, though there is a great temptation so to do when the plant in the next crock needs a drink. The *deutzias* were only watered about once a week; but the lilacs and azaleas needed water every day. The plants that were not doped did not take as much water, for they were not growing as fast.

If we had been working in a hothouse, and could have started early enough, it would have been possible to get the same results. The use of anesthetics shortens the time of forcing twenty to thirty days.

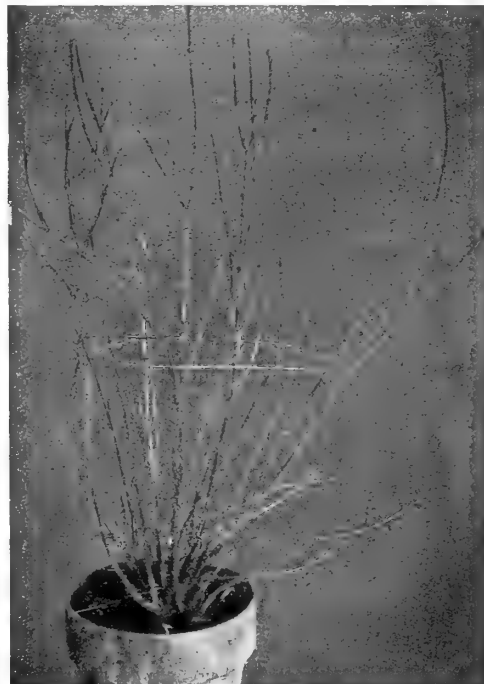
THE ITEMS OF COST AND PROFIT

2 azaleas (12-inch plants), named varieties	\$1.50
2 lilacs (<i>Marie le Gray</i> and <i>Charles X.</i>)	2.00
2 <i>Deutzia Lemoinei</i>	1.50
Ether (average 15 cents per plant) . . . . .	.90
	<hr/>
	\$5.90

For less than \$6 and practically no work we had flowering plants at Christmas worth \$15 to \$20. Ether sells at 75 cents a pound.



75. Two treatments forced *Deutzia Lemoinei* into flower. Growth began on December 3d, and by Christmas time the lower flowers were fully opened



76. One dose of ether for seventy-two hours failed to start the *deutzia* into growth. Not till February did it produce one small flower at end of shoot



77. The most satisfactory plant was lilac *Marie le Gray*. It had one dose. From December 10th till New Year's Eve it was in full flower all the time

Hardy Hydrangeas for Summer Flowers—By John Dunbar Rochester, New York

NATIVE AND OTHER SHRUBS WHICH KEEP THE GARDEN GAY FROM JUNE TO OCTOBER—PRUNING FOR IMMENSE HEADS OF FLOWER—THE BEST SPECIES TO EXTEND THE SEASON AND HOW TO GROW THEM

Photographs by HENRY TROTH, P. N. HUMPHRIES, and others

DURING the summer time, when there is a scarcity of hardy conspicuously flowered shrubs, the beauty of the hardy hydrangeas is all the more striking. They are not only



78. For Easter flower in pots grow varieties of *Hydrangea hortensis*. The variety *Otaksa* is the dwarfest yet best grower. It has black stems. Not hardy above ground in the North

very showy flowering shrubs, but they are nearly all natives and are the easiest of any plants to grow. They give a succession of bloom in profusion from June 15th to September 1st. There is only one requisite: all hydrangeas to flower freely and look healthy and vigorous must be planted in a deep, rich, well-drained soil, with full exposure to the sun. They will grow in a partly shaded position, but will not flower satisfactorily.

THE SECRET OF PRUNING FOR FLOWERS

Most of the hardy hydrangeas (including the common *H. paniculata*) flower on the young growths of the current year, and so can be pruned any time during winter or spring before growth starts. But there are some species, like *H. vestita* and *H. Bretschneideri*, that form their flower buds on the young shoots of the previous year, and winter pruning or cutting back the branches in winter or early spring will, of course, prevent flowering. I know of one *H. Bretschneideri* which was pruned back every winter for a number of years, to the perennial disappointment of the owner, who never saw a flower. He was giving it the same treatment as *H. paniculata*. One winter's day, happening to observe that the ends of the branches had large, plump, round buds different from those on the other hydrangeas, he left them un-

pruned. Result, the bushes flowered freely the following year. All the pruning required by this type is a little thinning out of the weak branches and the removal of the flowering clusters when they are through blooming.

H. paniculata and variety *grandiflora* flower much more freely when they are cut back severely in late winter or early spring. If the bushes are healthy and in good form, and require no pruning other than to place them in good flowering condition, cut back the shoots of the previous year to within three or four buds of the base. You can cut *H. paniculata*, var. *grandiflora*, almost to the ground, annually, in early spring, and if the plants are growing in deep rich soil they will produce flower clusters of immense size, on long cane-like shoots, and must be tied up, which is a decided nuisance. That kind of pruning is only advisable when very large panicles of bloom are desired.

A SCARCITY OF INSECT PESTS

I have never seen any of the hydrangeas attacked by scale insects, but *H. paniculata* and var. *grandiflora* are frequently attacked by the small mite known to gardeners as red spider. If the spider is numerous and not checked the leaves will first turn yellowish, then present a scorched appearance and

finally drop. It is rarely troublesome, however, if the plants are growing vigorously in moist rich soil. This pest is always worse in a drought, or if the plants are checked in growth from any cause. Sprayings of clear water under strong pressure is the remedy. The rose beetle frequently attacks the foliage of hydrangeas. This is perhaps one of the most irrepressible of insect pests, but fortunately its season of attack does not last more than three or four weeks. I have tried numerous supposed remedies, but nothing quite effective. The most satisfactory treatment so far has been Ivory soap, dissolved and boiled in the proportion of one-half pound of soap to ten gallons of water and applied by a spray pump. This kills the rose beetle by contact, but the treatment has to be frequently repeated. This soap used in any degree of strength does not hurt the foliage, and is also destructive to a great many other insect pests, and, lastly, it is pleasant and cleanly to handle, which cannot be said of whale-oil soap, and many other insecticides.

SOIL CONDITIONS CONTROL PLANTING

There is little to choose in the season for planting hydrangeas. If the soil is heavy and somewhat cold they had better be planted in spring, but if the soil is of a light, loamy



79. The oak-leaved hydrangea (*H. quercifolia*) of the South is hardy as far north as Philadelphia. A smaller tree than the common *H. paniculata*, var. *grandiflora*. Has pinkish-white flowers, the sterile ones becoming purple



80. The ideal way to plant the most popular of all the hardy hydrangeas and one of the very best summer flowering shrubs (*H. paniculata*, var. *grandiflora*). It shows its individuality. To get blooms like this prune lightly. Hard pruning gives much larger flower heads, but not so many. This plant is probably twelve years old

nature and well drained they can be profitably planted in the fall.

HYDRANGEA FLOWERS FROM JUNE TO OCTOBER

The first hardy species to flower is *H. vestita*, which ordinarily comes into bloom from June 15th to June 20th. The round flower clusters (or cymes, as they are technically called), which are seldom numerous, are flat with showy white sterile flowers about one inch in diameter on the circumference. The fertile flowers are white but very small. The cymes are from three to five inches in diameter. The leaves (about two and one-half inches wide and four and one-half inches long on young shoots) are covered on the

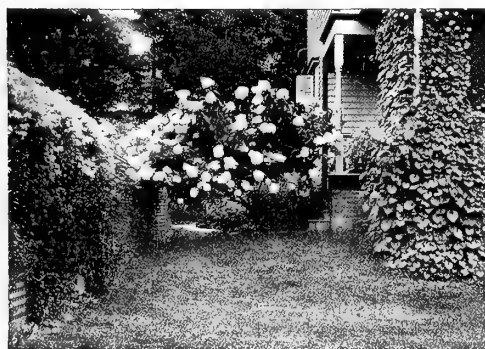
under side with soft, whitish hairs lying flat. It is not as often seen in cultivation, unfortunately, as its merits as a shrub warrant.

H. Bretschneideri (*H. vestita*, var. *pubescens*, *H. Pekinensis*), which looks much like the above, is a much freer flowering and therefore more decorative shrub, coming into bloom just as *H. vestita* passes, and lasts from June 20th-25th until July 7th-12th. The white sterile flowers on the outside of the large flat clusters are usually one and one-half inches in diameter. The fertile flowers are yellowish white. The cymes are from four to six inches in diameter. The leaves on young shoots are one and three-quarter inches wide and five inches long, with enough pubescence beneath. Both the terminal branchlets on the ends of last year's shoots usually produce flower clusters, and one or two of the lower buds will often do the same, and frequently last year's branch will carry six large cymes. It is perfectly hardy and a very easy shrub to cultivate.

About July 15th *H. arborescens*, found native from New Jersey to Florida, comes into bloom. The whitish flowers are borne on roundish clusters on the ends of the shoots of the year, and are all fertile, although some times varieties may be seen with a few sterile flowers on the outside of the cymes. The foliage is quite attractive, usually four inches wide and five inches long, and covered beneath with glaucous hairs. This species is almost

hardy; in western New York it is usually partly winter killed, but if cut back severely always flowers freely from the new growth, and so makes a desirable shrub well adapted to small gardens. There is a form of this with smooth leaves (*H. urticifolia*, of the trade), having the same flowering habit, which comes into bloom about a week later.

July 30th sees *H. radiata*. The convex white flower clusters have always quite showy sterile flowers on the outside. The leaves are three and three-quarter inches wide and five inches long, on young shoots, and covered beneath with a dense felty mass of white hairs, which gives the leaves a distinctly handsome appearance. Being a Southerner, the plant



81. An old plant of *H. paniculata*, var. *grandiflora* enlivens the back yard in September. It needs more light at the base and more pruning to "clothe" itself better



82. Flowers right down to the ground! This plant has the benefit of all possible sunshine and is pruned moderately. Three years old

MANAGING THE TUB HYDRANGEAS

There are numerous varieties of *H. hortensis*, but they need winter protection north of Philadelphia, although I have seen remarkable success with some of the varieties in some parts of Long Island without any protection other than that afforded by the shelter of a wall or a residence. The varieties Imperatrice Eugenie, Thunbergi, Otaksa, Belzoni and Thomas Hogg are a few of perhaps the most distinctive kinds, all of which are described in the dealers' catalogues. They can be grown in tubs, and it only takes a few years to grow them into large specimens. Although tender, they give but little trouble in winter. If they are stored away in a cellar or any place where only a little frost penetrates, and kept dry until early spring, they survive and certainly are well worth all the trouble.

HOW TO RAISE PLANTS GALORE

Some of the hydrangeas are easily raised from seeds, which are very small. *H. Bretschneideri*, for example, if gathered as soon as ripe and sown in a flat and placed in a cold-frame, will germinate freely the following spring, and, indeed, there is not much use in trying any other method of increase; cuttings are not at all easy to root. *H. paniculata* and the variety *grandiflora* can be propagated by cuttings of the green wood taken in summer, and placed in sand in a hotbed shaded from the sun by muslin screens three or four feet above the frames. The frames must be kept close, and frequently syringed until the cuttings commence to root. The oak-leaved hydrangea is difficult to propagate from cuttings, and seeds germinate slowly, but it can be layered successfully and it is also propagated from suckers.

The hortensis hydrangeas are easily propagated from cuttings of the green wood taken at any time of the year. In ordinary practice, however, cuttings are usually taken from strong wood about the end of February, and placed in sand on the propagating bench and potted off when they have rooted.



83. For formal effects on a driveway, *H. hortensis*, var., grown in tubs, can be held in reserve in the cellar all winter, and after doing duty in summer removed into shelter when frost comes

is reputed to be tender, but, strangely enough, it seems to be hardy in western New York, in the neighborhood of Rochester.

At the end of July and all through August the oak-leaved hydrangea (*H. quercifolia*) is an exceedingly beautiful native shrub. In native conditions in Florida it frequently attains a height of from fifteen to eighteen feet. The white fertile flowers which are borne on panicles have large showy sterile flowers scattered irregularly all over the clusters. The attractive leaves are deeply lobed, and are usually five and a half inches wide and six and a half inches long, with pale woolly growth beneath. They turn to a beautiful plum color in the fall. Though it requires protection in winter in the neighborhood of Rochester, N. Y., it is well worth any special care to enjoy its beauty.

From July to September forms of the common *H. paniculata* lighten up our gardens. The showy Japanese variety *grandiflora* is one of the most popular of garden shrubs. The typical plant is not often seen in gardens. It has two forms, both with fertile and sterile flowers intermixed, and blossoming from four to six weeks apart. The early form (*H. paniculata*, var. *præcox*) flowers about the middle of July and the other (called *H. p.*, var. *tardiva*, in gardens) a month or more later. The flower clusters are pyramidal, and vary much in size, from three or four inches up to a foot or more in depth, all depending upon the cultural conditions under which the plants are growing. It is the variety *grandiflora* that is the commonly known late summer flowering shrub of almost every garden. The huge flower heads are entirely covered with large sterile flowers, which give it such a showy appearance. It usually comes into bloom about August 1st and remains in good condition throughout the month, when the clusters turn to a pinkish purple, and will retain this color for a long time when cut.

H. petiolaris (*Syn. Hydrangea scandens*) is a most beautiful climbing species and is not common in cultivation. It blooms from the middle to the end of June. There are very few good specimens of this plant, as there seems to be some difficulty about making it flower, yet if it has the full exposure to sunshine there need be no failure. Many people

have tried it as a vine in more or less shade and have been disappointed. Every once in a while an old plant is found in some old



84. Backed by the foliage of tall trees the hortensia (*H. hortensis*) flowers show up conspicuously. Grown from cuttings taken any time of the year

neglected garden spot that abundantly proves its real value. A good many years since there was a fine specimen on the famous Dana estate on Long Island.



85. The paniced hydrangea (*H. paniculata*, var. *grandiflora*) grown in shrubbery and severely pruned. The long slender shoots droop over and need stakes. Compare with the fine isolated plant in Fig. 80



86. There is real pleasure in preserving their lusciousness for winter use. Use sound, ripe, but not overripe, fruits for canning. For jellies some may be underripe

Saving the Garden's Surplus—By Edith L. Fullerton Long Island

CANNING AND PRESERVING FRUITS AND VEGETABLES FOR WINTER USE THAT OTHERWISE WOULD GO TO WASTE—METHODS, TOOLS AND ACCESSORIES—WHAT TO CAN AND HOW TO DO IT

Photographs by H. B. FULLERTON

IF this is your first flight in the art of preserving study all the devices to make labor as light as possible and have the result as great a success as may be. Don't for one moment contemplate tins; they are villains in disguise, besides being usable but once and then a burden to the household to dispose of. Glass is good forever. Those which have been in use for many years are of two general types, the one having a screw metal top, the other a clamp glass top. To my mind the latter is superior, for, when the clamp top jar is once closed (which requires but little strength) that is the end of it. The screw top, on the other hand, always needs a few more turns, and even then one is not sure of its being tight. In opening these jars raise the clamp, run a knife between the rubber ring and the glass top, allowing a little air to enter, and the jar is easily opened. Nothing is spoiled, and the jar is as good as new the following year. The screw top never will unscrew easily, and usually a knife is used to force matters, to the permanent injury of the top. If the screw top jars be placed under running hot

water for a moment they usually open without the aid of a knife.

A new type of jar is worked on the simple vacuum principle. It is a wide-mouthed bottle, with a rubber ring fitting over the top, and a metal lid held in place by a clamp until the contents of the jar are cooked and cooled. Then the clamp is removed and the lid remains in place. To open insert a knife until a little air enters, when the lid will fall off. For a preserving kettle agate ware is

preferable nowadays, though in the olden days iron and copper were considered absolutely essential to success.

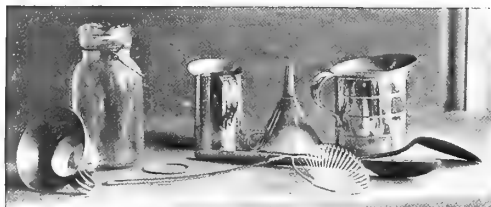
Boil the jars in a wash boiler, placing them on something to hold them from the bottom of the kettle, as the intense heat of the cooking is liable to break the glass.

With these articles you may preserve the surplus crops of the garden, though there are many other little devices which will facilitate work to a marked degree.

Few vegetables beside tomatoes are ever attempted in the home canning. Why? Beans nearly always receive one trial, generally spoil, and never have further attention. The only art of their preservation lies in destroying all germs of mold or ferment. This is done by putting the goods into the jars, placing the covers in position, and then boiling them. As a rule vegetables should be blanched or parboiled before being placed in the jars. This, while not destroying the flavor, removes any acrid quality. This parboiling is done in boiling salted water, though I have put up tomatoes by boiling them in



87. Pickles are placed in brine strong enough to float an egg before vinegar and spices are added



88. The little accessories that render work easy. Always get your tools ready before canning day arrives

the preserving kettle after peeling them, and packing boiling hot in the jars and sealing at once. I did not succeed with beans by this method, though I have had them keep well when boiled in the jars.

Different vegetables need different times for the parboiling because of their varying

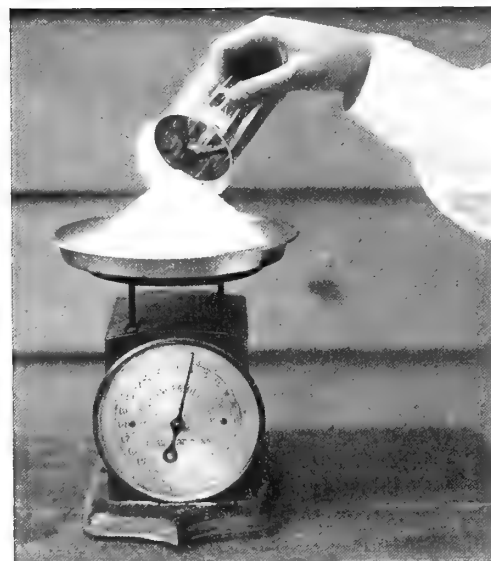


89. Piccalilli is a concoction of green tomatoes, celery, onions, cabbage and peppers, with sugar, vinegar and spices, boiled slowly till tender. Sundry spices are added according to one's fancy

textures, depending also to some degree on the age and tenderness. The average times are:

Peas, 8 minutes	Carrots, 15 minutes
String beans, 4 minutes	Turnips, 15 minutes
Cauliflower, 4 minutes	Spinach, 6 minutes
Lima beans, 15 minutes	

The best test for most of them is when they can be pierced with a fork. The vegetable, after dressing it as you would in preparing for the table—that is, peas shelled, beans cut into small pieces, corn on the cob, beets unpeeled, limas shelled, etc.—is thrown into the boiling salted water. When blanched



90. "A pint's a pound the world around." Equal quantities of fruit and sugar for jam or preserve; equal quantities of fruit juice and sugar for jelly

drain off the water and allow cold water to run through them until thoroughly chilled and hardened.

I seem to be giving these rules as definite and final, but I mean to give them as one of the ways, for there are others. For instance, beets may be blanched thirty minutes, then skinned and packed into jars, and the jar filled with vinegar and water in the proportion of one-half pint of vinegar to one quart of water, and the entire jar boiled for forty-five minutes.

The screw and clamp tops should not be fastened tight while boiling. Just lay on the screw top with the clamp put over it, but not fastening the pressure clamp. When the jar has been boiled the proper length of time screw and clamp the tops without lifting them, for even one bubble of air entering the jar might cause the contents to spoil.

THE TIME TO COOK

Authorities differ widely as regards the time for boiling the jars, ranging from ten minutes to one hour and twenty minutes for tomatoes. It all depends on the size of the jar. The bigger the jar the more it holds, and the contents in any case must be brought up to the degree of heat necessary for thorough sterilizing all through. When closed the cover pressure keeps out all air, provided, of course, the rubber bands are quite fresh. Never use old ones.

In canning fruits (such as cherries, strawberries, peaches, pears, huckleberries, blackberries, plums) pack them in jars with the proper proportion of sugar added and fill up with water, or mix the sugar and water first, making a syrup. In this process the vacuum jars require an average of twenty minutes' boiling, while most fruits in ordinary jars require but from five to ten minutes. If the fruit is to be used soon after canning I use the syrup, but for longer keeping I think it easier to place the sugar and water in the jars separately. The sugar after the boiling settles at the bottom of the jar, and so I turn the jar upside down to cool, then right side up again to put away. The sugar is then thoroughly incorporated.

LITTLE TRICKS THAT TELL

It is surely worth while to can rhubarb and pineapples for winter use. The former should be cut into inch pieces and *not* peeled, for the red skin will impart a beautiful color to the syrup. Pineapple should be peeled and the pieces picked out with a fork, which eliminates the tough core, which in sliced pineapple is retained. Pears and peaches should be peeled, halved and seeded; apples the same or even quartered. Plums and cherries may be stoned or not; the pits left with the fruit impart a peculiar bitter flavor which to me is delightful.

Canned berries require to be just ripe and thoroughly sound; it is useless to waste time upon soft, poor fruit. Fruits for canning should be selected as much with a view to the ultimate color as for flavor. There are red-fleshed and white-fleshed strawberries; take the former. And in plums what more pleasing than the rich red of the Satsuma



91. Shred the pineapple from the hard core, which spoils the "sliced" goods. The core is too hard to eat

plum—superb when canned, but useless to eat out of hand! Very little attention is paid to the home-canning qualities of certain varieties, but surely there is a good deal to be learned here. "What to can" is as important as "How to can."

Preserves are always made with equal weights of fruit and sugar. They are some-



92. For sour pickles there are cucumbers, cauliflower, pearl onions, martynias, young walnuts and green tomatoes. Cauliflower, onions, beans and cucumbers for "mixed pickles"

times called "pound-for-pound" fruits. The sugar is placed in the kettle to melt with just enough water to keep it from scorching; the prepared fruit is added and simmered gently until tender. Another way is to add the sugar immediately to the fruit, let it heat slowly and boil until a little juice placed on a saucer begins to thicken. An easy rule is:



93. The old-style conical jelly bag is good for squeezing the fruit. In the wire-hoop style the weight can be shifted around as necessary



94. Make light work by being outdoors. With an oil stove in a shady corner prepare another batch of fruit while one is sterilizing

cook small fruits forty minutes and large fruits until they can be pierced with a straw. For the vacuum jars the fruit should be boiled in the syrup five minutes, then packed in the jars and the jars boiled twenty minutes. Many preserves are improved by the addition of lemon or ginger, or both. Tomatoes are delicious prepared in this manner, and if the small yellow or red fruit is used and covered with some of the sugar before cooking the form is retained.

Authorities disagree as to the amount of sugar to use in making jams; the proportion varies from equal weights to one pound of fruit to three-quarters of a pound of sugar. Split the difference, if you wish, and I think you will come out all right. The only differ-

ence between jam and preserve is that the former is "boiled down" a little more than the latter.

Jellies are made from the juice of fruit only, with equal weight of sugar. Clear jelly is made by crushing the fruit while it is heating slowly, then allowing it to drain through a cheesecloth or coarse muslin bag over night. You can get more jelly from a given quantity of fruit by squeezing the juice, but the jelly will not be so clear.

THE ART OF CLEAR JELLIES

If the jelly is being made from berries, such as currants, raspberries, strawberries, crush them thoroughly and heat slightly to start the juices flowing. From apples, quinces, etc., quarter the fruit, but do not seed it or pare it; heat in the preserving kettle, mashing the whole until the juices flow freely, then drain through the jelly bag. Do this preferably over night, for the preparing can take place in the afternoon and the finishing the following morning.

Measure the juice and take equal measure of sugar, placing the juice in the preserving kettle and the sugar in shallow dishes; place the former over a good fire to boil and the latter in the oven to heat through. Do not let it scorch, however, but stir it often and if the oven be very hot leave the door ajar.

The juice must *boil* exactly twenty minutes, removing the scum as it rises; then pour in the hot sugar, stir thoroughly, let the whole boil two minutes, take from the fire, and pour at once into jelly tumblers.

Now if your fruit (especially berries and



95. Under the grape arbor a single oil stove will suffice to "do up" plenty of fruits, and the labor is not a burden. Do a little each day

grapes) is the least bit too ripe (in fact it is almost necessary to have a little green fruit), the jelly may not be quite stiff, but don't be discouraged; just put the tumblers on a tray, cover them with a piece of glass, and set in the sun for several days.

The ordinary jelly bag is conical, so the juice drips from the end, and is very satisfactory if the pulp is to be squeezed. The other, a bag hung from a stout hoop and suspended by four strings, is particularly handy for clear juice; the weight can be shifted and the pulp stirred.



96. All these vegetables may be canned, and it is worth while to save some of them for winter. Vegetables should be parboiled in salted water before being placed in the jars; this removes any acrid quality, without destroying the flavor

The Peony Month—By J. Eliot Coit Cornell University

SEPTEMBER FOR PLANTING AMERICA'S COMING GARDEN FLOWER—WHY THE HERBACEOUS PEONY SURPASSES THE ROSE—WHAT VARIETIES TO CHOOSE AND HOW TO RAISE PERFECT PLANTS

Photographs by the author, except No. 107 by HENRY TROTH

SEPTEMBER is the one month of the year in which peonies can be planted with a certainty of success. They commence growth so early in the spring that it is only by a chance that they can then be moved early enough, and there is always a loss of flowering power after a spring shift.



97. The sort of root to buy—not cheap, but the best. Sure to grow

WHY GROW PEONIES?

There are at least seven good reasons for the popularity of the herbaceous peony:

1. It is easy to grow; anybody can raise glorious peonies with less trouble than it takes to grow good roses.
2. A peony well established is as permanent a feature in the garden as is desirable in a herbaceous plant.
3. Peonies are perfectly hardy wherever apples can be grown, passing through the most severe winters without injury.

4. The blooms are large, showy, of various forms, and in any shade of color from white to purple.

5. Almost all varieties are fragrant.

6. It is practically free from disease and insects. No spraying or dusting or hand picking of worms is necessary.

7. It is equally successful as a cut flower and for artistic landscape effects.

Opposed to this array of advantages, there are two objections, which, however, dwindle into insignificance by contrast.

1. It multiplies slowly.
2. In some of the weak-stemmed double varieties the flowers are badly beaten down by rains. This last objection does not count for much because singles generally stand up well, and many doubles have developed strong stems, while those which have not can easily be supported.

HOW AND WHERE TO PLANT

The peony will grow on almost any well-drained, fertile soil, but it does its best on a rather heavy, moist loam. Don't make the mistake of planting your peonies under trees, as many suggest, for, while the blooms like a moderate shade and will brighten up sombre nooks, the ravenous tree roots will be sure to steal their food and weaken the plant. And don't make the mistake of planting in swampy land. A well-drained slope leading to a swamp will do, however. The roots want plenty of water, but air is equally necessary. If possible, prepare the land several months beforehand by digging to a depth of two feet and working in plenty of well-rotted compost

or cow manure. If your soil inclines to be sticky, work in street sweepings or sifted coal ashes.

Make the ground rich, for the peony is what gardeners term a "gross feeder." One English amateur gives his peonies a mulch of three inches of cow manure each year, besides large quantities of manure water, and has "never yet discovered the limit of a peony's greedy appetite."

September is the month for planting peonies. Have the roots arrive from the nursery about the 15th, and plant them at once not nearer than three feet apart, with the crowns



98. One of the oldest and still one of the best herbaceous peonies is *festiva maxima* of the nurseries. Double white, with a few carmine streaks in the centre

from two to three inches below the surface; press the soil well about the roots and leave level on top. If in your latitude the thermometer drops to zero or below, mulch the soil in November with leaf mold or muck. As soon as the ground thaws in the spring the little tender white feeding roots will start out in quest of food and water.

Herbaceous peonies can be moved in the spring, but it surely means the destruction of these young rootlets, and consequently another year added before the plant will come into full bloom. If strong roots are properly planted they will probably throw up one or perhaps two bloom shoots the first summer, but the buds may as well be pinched out and all the strength allowed to go to the maturing of as many leaves as possible. Some people recommend feeding the plants with liquid manure just before blooming time. This is all right, but any apparent immediate benefit will be due largely to the water, while the plant food in solution will be mostly laid by for next year.

Peonies are gross drinkers as well as gross feeders, and no one should try to raise specimen blooms without having a hose handy.

After a clump is once well established it will last for twenty years, and in some cases fifty years. It is better, however, to take them up, separate the roots and replant them every seven or eight years. If this is not

done some varieties tend to die out in the centre and form an irregular ring.

The peony has one bad habit: the heavy double flowers have a tendency to lop over on the ground and get bespattered with dirt by rain. On account of this the plants should always have some support, preferably one which consists of a ring of heavy galvanized wire two feet in diameter, supported on three legs three feet long, which can be pushed down into the soil. This support will be invisible a few feet away, will last many years, and can be stored in the shed over winter.

If you wish to grow extra large specimen blooms for exhibition remove the side buds as soon as they appear and throw all the strength into the terminal bud, and don't fail to give plenty of water.

In a large collection set the plants from three to four feet apart each way (according to the vigor of the variety), and preferably in oblong beds containing three rows each. These beds may be cut in the grass at the side of the lawn. But don't forget to buy a quantity of some tested standard sort and plant freely about the porch and steps and along the shrubbery border. And arrange some large isolated clumps of a double white variety in the bays of the shrubbery, with a background of dark evergreens, if possible.

WHY PEONIES SHOULD BE CUT IN THE BUD

In order to enjoy the most delicate tints the flowers should be allowed to open in the



99. There are various forms of doubling. In *L'Avenir*, a good semi-double pink, the stamens have changed to petaloids instead of petals. (See also Figs. 100 to 106 for comparisons of other stages)



100. The petal arrangement in Princess Beatrice gives an irregular, three-storied effect. Color light pink



101. Doubling incomplete. A few yellow stamens relieve the dark red of the petals. Louis Van Houtte



102. Feathery petaloids. Compare with those in Fig. 99, which are club-like. Name uncertain. Pink

house, for the hot sun bleaches out the delicate gradations of color, especially in the darker hues. Cut them just as the guard petals begin to open and, as each bud is cut, drop it into a pail of fresh water. If they are not immediately put into water, bubbles of air will be drawn into the stem, which will interfere with the passage of water, thereby shortening the life of the blooms. Double blooms should last a week in the house if kept in a cool place and the water changed every day.

If a proper selection of varieties is made peony blooms may be had full six weeks.

The season is ushered in about the middle of May by *P. tenuifolia*, and carried along by the well-known old double red peony (*P. officinalis*, var. *rubra*). Then come the tree peonies (*P. Moutan*) and, before they are gone, the earliest varieties of the Chinese peonies (*P. albiflora*). Somewhere near July 10th the blooming season closes with the latest varieties of the albiflora group.

There are too many varieties, and it is very difficult for the amateur, or anyone else for that matter, to purchase stock which will in every case prove itself true to name.

The range of peony color shows almost

every shade from white to pink, flesh, salmon, crimson, purple, and amaranth. There are but few yellow-flowered varieties, and these are generally of a very light color, with the guard petals more nearly white or pink. No satisfactory solid yellow is as yet known.

One of the attractive features of a collection of peonies is the diversity of form in the flowers, running from the single with a mass of golden-yellow stamens in the centre up through the various degrees of doubling to the enormous perfect double, where all the stamens, and in many cases even the seed vessels, have been changed to petals. In



103. The petaloids in Mme. Breon are erect in morning, becoming recurved in the evening. Pale yellow



104. Mixed petals. This flower lacks character and holds its form poorly when cut. Name uncertain



105. An ideal flower. Petaloids greatly developed, but still distinct from guard petals. Chas. Binder, deep pink

nearly all forms the large outer guard-petals remain distinct from the mass of smaller narrower ones (called petaloids), and which are the transformed stamens and carpels.

It is true that peonies are not as cheap as a host of our other popular garden plants. In fact, the roots cost a good deal to start with, and you have to wait till the second blooming season before the blooms amount to much. It is slow propagation which makes the first cost an item of importance. Ordinarily the roots (crown tubers, correctly speaking) are dug in August and are allowed to wilt somewhat, then divided with a knife to two or three good eyes to a piece and at once re-planted. Varieties differ in the rate at which they multiply, and this, together with the quality or rarity, make prices differ widely.

RAISING FROM SEEDS A PATIENCE TEST

But someone asks, "Why not raise peonies from seeds?" You may, but the probabilities are that you will get just as many varieties as you succeed in getting seeds to grow, and after four or five years, when they come into bloom, most of them will turn out worthless. A noted peony grower told me this summer that in more than six hundred seedlings coming into bloom in one season there was not one worth saving, and the whole patch was plowed up and more seed planted in the hope that some five years later there may be some one or two varieties which will repay for the time, labor, and land.

Seeds set very sparingly on double flowers, because very frequently the seed vessels are changed to petals. Most of the single flowers seed heavily, and for this reason most of the seedlings raised are single. There is, how-



106. A good type of a perfect, regular double flower, M. Dupont, white; blooms late. (Compare Figs. 99-105)

ever, for the amateur a vast fund of pleasure to be had from raising seedlings.

Plant the seeds as soon as they are ripe, in rich loose soil in a position where they will not be disturbed till they bloom. This will usually be from four to six years. Some of the seeds may wait a year before germinating, and they are almost sure to do this if allowed to dry before planting. If you wish to make an earnest effort to produce better varieties

cross or hybridize those having desirable qualities, but don't be disappointed if you don't grow into a Burbank all at once. One thing more: If you do produce what looks like a valuable variety test it by exhibiting at some horticultural society's show.

INSECTS AND DISEASES

Peonies are practically free from insect pests. Of course, we often find large black ants crawling over the buds, but I could never see that they did any harm. There are two fungous diseases (perhaps they are the same thing) which fortunately are not very serious. As yet no one knows how to control them. One is the sudden rotting and collapse of the stems at the surface of the ground, and the other is a dry black rot of the buds before they develop. As an ounce of prevention is worth a pound of cure, it is a good plan to collect and burn all infected shoots.

A GLIMPSE AT PEONY BOTANY

The genus *Paeonia* embraces, speaking in round numbers, about twenty-five species, all but one of which are natives of Europe and Asia. *P. Brownii* is the only American species, and occurs in California, from the coast to the mountain slopes. One species, *P. Moutan*, is shrubby, and curiously enough has never been found in the wild state. This is called the tree peony, and is largely planted in hundreds of varieties.

The great bulk of our thousand or more varieties of herbaceous peonies are derived from *P. albiflora* (*P. chinensis* of the nursery is a variety of this) and *P. officinalis*, while a few have arisen from the following species: *P. peregrina*, *P. tenuifolia*, *P. ano-*



107. The only shrub in the family. The Moutan or tree peony (*Paeonia Moutan*) has an unlimited host of varieties of which no one knows the names. The flowers measure ten inches in diameter and come in white, pink and magenta. Good forms are easily raised from seed

mala, *P. paradoxa*, and *P. arietina*, all of which are European or Asiatic.

VARIETIES

The varietal names of peonies are in a chaotic state. In one case we may have a number of different names for the same identical variety, and, on the other hand, two or more totally different varieties may masquerade under the same name. The American Peony Society is trying to straighten the tangle. Taking a consensus of expert opinion, however, it is possible to make up general lists, which will be fair conservative guides for making up a general collection. With a few exceptions all the varieties given in these lists have been in the trade for at least fifteen years (many of them fifty years), and are still popular and much sought after.

EARLY FLOWERING VARIETIES*

Single.—*Tenuifolia*, crimson; *Anemonæflora*, yellow anthers; *Officinalis*, from white to red; *Arietina*, very large rose.

Double.—*Officinalis*, vars., *rubra plena*, crimson; *Officinalis*, vars., *rosea plena*, rose; *Officinalis*, vars., *alba plena*, pink to white.

MID-SEASON FLOWERING VARIETIES

Single.—*Albiflora*, white; *Whitleyi*, white; *Pottsi*, semi-double dark crimson; *Emily*, soft rose-pink; *Stanley*, maroon-crimson.

Double.—White, or practically white. *Festiva maxima*, a superb variety; *Alice de Juliecourt*; *Boule de Neige*, exceedingly beautiful; *Mme. Calot*; *Noemie Demay*, beautiful light pink; *Mme. Crousse*; *Albred de Musset*, bluish white flushed with salmon rose; *Mathilde de Roseneck*.

Shades of Pink.—*Artemise*, *Jeanne d'Arc*; *Lady Leonora Bramwell*, silvery rose, extra good; *Mme. Chaumy*; *Modeste (Guerin)*; *Charles Verdier*; *Delicatissima*, light rose, carmine margin; *Modele de perfection*.

Red or Crimson.—*Gloire de Douai*, extra good, perhaps the darkest of all peonies; *Ambroise Verschaffelt*; *Isabella Karlitzky*.

Pale Red and Sulphur Shades.—*Mme. Emile Galle*; *Triomphe de Paris*; *Solfaterre*, the finest of all sulphur-colored peonies.

LATE FLOWERING VARIETIES

Duchesse de Nemours (Calot), white, very large; *Marie Lemoine*, white with yellow anthers, very beautiful; *M. Dupont*, white; *Triomphe du Nord (Millez)*, pink; *Mme. Forel*, pink; *Souv. de Gaspard (Calot)*, pink; *Berlioz*, red; *Richardson's rubra superba*, red.

TREE PEONIES

The tree peony, *P. Moutan*, is a woody plant, or shrub, three or four feet in height, which does not die down to the ground each year. It is hard to propagate, because it does not form large, fleshy rootstocks like the herbaceous kinds. It is worth growing for the large size of its flowers. Propagation is usually done by grafting on roots of the herbaceous peony (*P. officinalis*), which tends to

make it short lived. Fortunately some growers, and especially the Japanese, are beginning to graft it on moutan stocks. When this has been done it is necessary to carefully watch the plants the first year and break off all shoots arising from the stocks in order that they may not choke out the graft. If allowed to grow you will get a host of magenta flowers instead of the delicate colors of the graft.

In warm, sunny situations tree peonies have a way of budding out too early in spring and so get frozen. On this account it is often necessary to give them a slight protection in spring on frosty nights. There are about one hundred varieties of doubles and five hundred varieties of singles to choose from, but it is really harder to get hold of choice kinds of tree peony than of the herbaceous type. For lawn specimens and for shrubbery foregrounds the tree peony in pink or white colors is unsurpassed.

Cornflowers That Lived Outdoors all Winter

WE have raised cornflowers for many seasons, but never before did we have any that acted like perennials. They bloomed in November, several weeks after the tender vegetables were killed by early frost. The early and continuous snow kept them in cold storage, and in March the plants turned to a healthy green and later sent up buds that bloomed in May, when self-sown cornflower plants were only a few inches high. The plants were unusually strong and bushy, which we attribute to doses of liquid manure given them both last fall and this spring. Doubtless our experience would not have been so remarkable if we had not planted the seeds late, the end of July, and then kept all the fall-blooming



108. Late flowering is induced by constantly picking off the early buds. These cornflowers (*Centaurea Cyanus*) were made to flower in November. They remained in the garden all winter and bloomed again in March. A self-sown seedling shown in pot

flowers picked clean so they could not go to seed. This season's bloom was a month ahead of self-sown plants, which flower the last week in June.

R. A. MASON.

New York.

August-sown Lettuce That Broke the Record

Photograph by the author

WE had fresh lettuce from the open garden on New Year's Day. Seed was sown August 13th, but some of the heads were not used and were left standing. The snow



109. Sow lettuce in August and September for Fall crops. The earlier sowing will mature heads in the open, later sowings are to transplant to coldframes. These heads of Big Boston were sown August 13th and gathered January 1st

came early and came to stay, so the lettuce was covered all winter. On January 1st we saw green leaves showing above the snow, and an investigation revealed several heads of lettuce that looked very fresh, hardly different from what we pick in midsummer; except that the outer leaves were thick and tough, almost like cabbage leaves, but the hearts were quite good, not so sweet and tender as summer lettuce, of course, but still eatable.

Several plants were left till spring. They flourished and were in blossom on June 26th, much ahead of the fall-planted lettuce, which was no more than in bud on July 13th, when the wintered lettuce had ripe seeds; from these we expect to have a good crop of heads this fall. Big Boston was the kind used in this patch that wintered over, as that is recommended as the "very best for fall," to which we can add, the very best for winter also.

What a pity lettuce will not stand the hot weather, but evidently the only way to have salad in midsummer is to plant endive! By the middle of July lettuce becomes tough and "bolts"—that is, it starts running to seed. Plenty of water may help matters somewhat, but it is of no use to expect the cos kinds, the most delicately flavored, to stand the heat as well as the cabbage sorts. Lettuce must have a rich moist soil and the surface stirred often, as quick growth makes for flavor, tenderness, and looks. Nitrate of soda worked around the plants, or dissolved in water and poured near the roots, is used by some gardeners.

[*The names given in this article are those in common use in the trade, but their accuracy is not guaranteed. The whole matter of nomenclature is now being tested by growing collections at Cornell.]

SOWING IN SEPTEMBER FOR WINTER

Extend the lettuce season by using coldframes and hotbeds. About September 15th a sowing can be made and the plantlets transplanted for wintering in coldframes. In February a planting can be made in a coldframe that has good protection, and in March seeds sown in a hotbed will make good plants for setting out in April. Every garden needs a frame or two. Without these adjuncts seed sowing must be deferred until early in the spring. If hot-weather plantings are to be risked seed can be put in every two weeks from the second week in April to the second week in August, but it will be necessary to shade the later plantings during the heat of the day.

SALADS IN THE WINDOW GARDEN

Even if you have no coldframe, a still earlier crop from the home garden can be started in a sunny window March 1st. A temperature of 70° by day and 50° by night will agree with it. These plants, transplanted to boxes and hardened gradually to outside conditions before being set in the garden, will give good results.

The August planting will be yielding heads in October or November, and a loose covering of hay will give protection from the frost that will naturally threaten at that season. I find broadcast sowing is better than in drills, using a strip about a half yard wide. The method is economical of space, and the plants can be easily thinned and worked, and it is less trouble to cover them from heat by day or frost by night.

Another good plan is to grow the lettuce between bush limas, or other spreading plants that are planted some distance apart, and the shade will help protect the lettuce. My custom has been to sow lettuce in the seed bed nine days before bush limas, and then, when the lettuce is of transplantable size (about three or four weeks after sowing), set out both together in their permanent bed. The limas should stand a half yard or two feet apart, which leaves room for lettuce to grow be-

tween. Or else sow lettuce four weeks before time for planting bush limas and transplant to the same bed at the same time. Lettuce seedlings can be set between other crops in any place where they can be left undisturbed for two months; by that time they will have headed and so will be out of the way. A very short row of seeds gives a big return. Ten feet yielded one hundred for transplanting, besides those left for earlier heading, six inches apart in the original row. The young plants are very sensitive to hot, dry air. Some newly set out were kept perfectly fresh and crisp with the protection of a strawberry basket for a few days, while those left uncovered were limp and wilted by the hot, dry weather. We generally allow three months from sowing to heading, but one year we had heads on June 9th from seed planted April 7th. Lettuce sown on October 26th gave good heads on June 14th, and we picked a head on June 3d from self-sown seed.

New York.

I. M. A.



How to Get Pansies Blooming in March

Photograph by the author

SOW pansy seed in August and winter the young plants. Climate regulates the exact date of seed sowing. In a place where one may expect a killing frost any time after the middle of September it is necessary to get the seed in the ground early enough so the young plants can get a sturdy growth before the frost comes. They



110. The secret of having plenty of pansies very early in spring is sowing in August. Transplanted into the garden border they flower in May. Transplant into a coldframe for March flowers

withstand the winter best when they are at least four weeks old before the cold weather comes; and, on the other hand, they should not be so large as to require cutting back before the spring growth begins.

Our pansy seed was sown August 7th, but there is good success for most people by planting during the middle of the month. Provide deep fine soil by working the bed over and over before sowing the seed. If the garden is rich and loamy no fertilizer need be applied. After sowing keep the soil from getting baked on top by a mulch of fine grass cuttings from the lawn sprinkled over the bed.

We had five packages of seed costing fifty cents. Each package of seed was scattered in a drill by itself, for we wanted to keep the colors separate. The seed was covered very lightly with earth and walked into the ground. There is no better way to press the seed down than to use the foot.

On the 27th of the month the seed was up, and it seemed as if every one had sprouted. We were surprised, for in the house in the spring we could never count on half the seeds sprouting when we grew them in the window in pans.

By September 21st the plants were three inches high. They had received no attention whatever up to this time, except water from the hose when the weather was very dry, in common with all the growing things of the garden.

That night came our killing frost, and all the glory of the garden was laid low. The pansies were not covered.

TRANSPLANTING TO THE OPEN GROUND

Next day we transplanted nine dozen of the plants to an open bed running east and west in the centre of the garden in the full sunshine. The soil had been carefully dug up and left open some weeks previous. A sprinkling of bone dust was added just before the final raking of the bed. The plants were set in rows north and south, the short way of the bed, about ten inches apart. We planted according to colors. The west end of the bed was given up to black pansies; next came a band of deep purple; beyond these were the yellows, and pure white flowers took up the other end. The graded color effect was good.

THE EARLINESS OF THE COLDFRAME

The fifth package of seed (mixed varieties) was transplanted to a coldframe for early blooming. It faced south, and was sheltered from the north and east winds by a lattice screen. The earth had been dug and turned while the plants were growing. As the plants were to have a hurried growth in the spring and would need quick nourishment, well-rotted manure was added to the soil instead of bone dust. These plants were set as close as six inches to one another. The coldframe accommodated a dozen and a half.

None of the young plants died by transplanting, though they did not grow any more that fall. The seedling bed hardly showed where we had removed the young plants.

Specialties for Fall Planting



We offer for Fall of 1905 an unusually large and well-grown stock of

FRUIT TREES

for ORCHARD and GARDEN, embracing varieties best adapted to various soils and regions.

ORNAMENTAL TREES, SHRUBS, ETC.

Consisting of rare and beautiful species and varieties for the embellishment of public and private grounds; Shade Trees, Street Trees and Flowering Shrubs, including Lemoine's marvelous New Double Lilacs, Deutzias, Mock Orange, etc.

ROSES

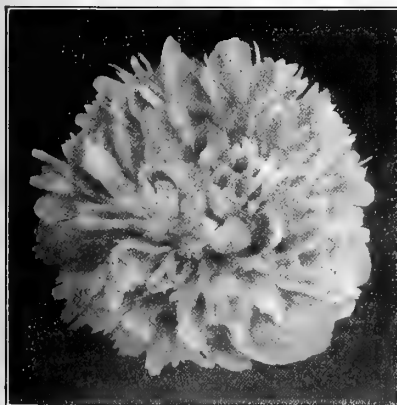
are a specialty, and we have a larger and better supply this year than ever. Our assortments embrace all of the old favorites, as well as the newest kinds from the most celebrated raisers in Europe. Our novelties embrace introductions of rare beauty and excellence.

PEONIES AND PHLOXES

Of these showy, beautiful, hardy, easily grown plants we have to offer the choicest kinds, selected with great care.

HARDY PLANTS. Including the most ornamental, flowering from early spring till late autumn, particular attention being given to Iris, Japan and German. *Our Beautiful Illustrated Descriptive Catalogue—144 pages, a manual indispensable to Planters, also Descriptive List of Novelties and Specialties for Fall, 1905, mailed free on request.*

ELLWANGER & BARRY, Nurserymen—Horticulturists, MOUNT HOPE NURSERIES, Rochester, N. Y.



IT WAS NOT BY CHANCE

we were awarded the **FIRST PRIZE** at Chicago in June for most extensive collection of

Peonies BUT BY YEARS OF SYSTEMATIC SELECTIONS OF VARIETIES

Our new Peony Catalogue is ready with cultural directions and prices on two and three-year-old clumps that will flower next spring. Now is the time to plant them. Also **Evergreens** and some of the **Deciduous Trees** and **Shrubs**, which we will deliver, plant and guarantee at a slight excess over catalogue prices (on orders amounting to one hundred dollars and within a reasonable distance of New York City). All known means are used to have our stock **shapely, vigorous and hardy**. Particular attention is paid to digging and packing. Landscape designs and plans for herbaceous gardens and borders. We move large trees. Take a few hours' time some day and inspect our grounds of over 100 acres filled with personally selected specimens from the best growers in America and Europe. A carriage will meet any train by calling up 91L Jamaica. Send for catalogue.

COTTAGE GARDENS COMPANY, QUEENS, LONG ISLAND, N. Y.

Plant Peonies Now



FALL is the best time to plant them and the earlier it is done the better. You will then have a good display of flowers next spring.

There is no other flower that will give you such an attractive display and supply of flowers for cutting. When once planted they practically take care of themselves and are well adapted planted in the border bed or in solid beds.

The cultivation of these grand plants is one of our leading specialties and we grow the choicest varieties in large quantities. Write at once for our illustrated and descriptive booklet of Peonies and other choice hardy plants and shrubs that should be planted in the fall for best results.

Don't wait until spring to plant if you want plenty of flowers and good effects next year.

Department B

WAGNER PARK CONSERVATORIES
SIDNEY, OHIO

There were about 450 seedlings from five packages of seed, and the surplus was left in the bed until spring, for we had not made room for so many plants.

On October 21st we covered the open beds with about four inches of straw and brush trimmed from the flower beds. It is essential to get some covering that will not exclude the air from the plants; or else the tops will decay.

The sashes of the coldframe were left open for some days after the plants were set that they might be hardened. During the winter these plants had no other covering than the glass window fitted in firmly and the blanket of snow that was tucked about the frame most of the time. During an open winter a straw mat should be laid over the glass.

LETTING IN THE SPRING AIR

In the warm middays of early spring the glass windows were raised an inch or more. By the middle of March we were picking pansies every day from the coldframe. At Easter time the bed was a mass of bloom. As the plants grew we had to raise the glass. By the time the sashes could be removed the plants were a foot high.

The open beds were uncovered the latter part of April. The seedlings, which had not been transplanted, began to grow so fast that we were bothered to find room for them. The marigold bed was bordered with deep purple pansies. The purple and gold made a royal show in July and August. Black pansies were set beside the mignonette. We had pansies in every nook of the garden and dozens of plants to spare.

A THOUSAND BLOOMS A DAY

The plants in the coldframe bloomed from the middle of March through July. Then they were trimmed back to get a fresh start for fall blooming.

The next plants to bloom were those set in the open bed in the fall. They bloomed from the end of May and continued all through August.

The plants that were transplanted in the spring were slower in starting, and they did not bloom any longer. It would seem from our experience that the young plants should be moved in the fall to their permanent positions.

We spent fifty cents for seed. We raised 450 plants. A few plants were lost during the summer by attacks from stem borers. These would not number a dozen. About three times during the season the plants were sprayed with suds made from tobacco soap. From June through midsummer we picked an average of 3,000 blooms every third day. Keeping the flowers picked was the never-ending attention the plants demanded of us. We tried a few experiments in color grouping, and are now firmly convinced that the different varieties should be grown separately—each color a solid mass, and graded from dark to light. Promiscuous mixing is not so pleasing. The best named strains of seed should always be bought; they give larger flowers and better colors.

Pennsylvania. FLORA LEWIS MARBLE.

GEORGE T. POWELL Consulting Horticulturist

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Examinations made of land and locations for country homes. Information and instruction in Gardening Ornamental and Fruit tree planting, Lawn making and Poultry raising.



SUN-DIALS

with or without PEDESTALS

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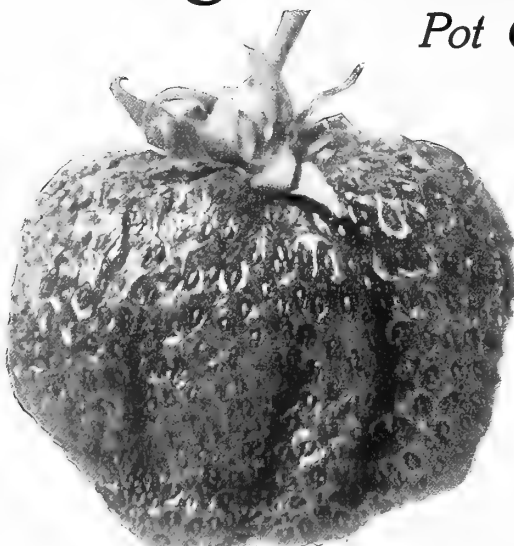
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Pedigree Strawberry Plants

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VERY EARLY VARIETIES: Fairfield, Success, Lady Thompson, Climax.

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LATE VARIETIES: Gandy, Lester Lovett, Arline, Aroma, Joe, Late Champion.

Price per dozen, 75 cents; per 100, \$3.50
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shown below were bought of us, and cost less than \$10.



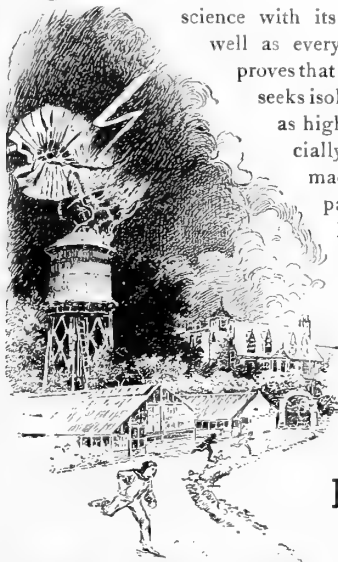
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EVERGREEN NURSERY COMPANY
STURGEON BAY, WISCONSIN

Inviting a Thunderbolt

"It is in vain to look for a defense against lightning." Thus wrote Publius Syrus, a wise man of the year 42 B. C. But, on the other hand, is it not the height of folly to invite the thunderbolt? Modern science with its experiments, as well as every-day experience, proves that lightning usually seeks isolated objects, such as high trees, and especially tall structures made in whole or in part of iron or steel.



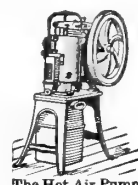
Every man, therefore, who erects above his house or barn a windmill with much metal in its construction places in peril the life

of the dwellers beneath its tall tower. If, then, you own a windmill, run for your life from beneath such a dangerous structure whenever the lightning plays. But, in case you have not yet installed a private water-supply, look into the merits of the only kind which is absolutely safe and reliable at all times and seasons—that is, the

Hot-Air Pump

This little machine requires no high, unsightly tower; you can tuck it away anywhere, in your cellar, or in a corner of some outhouse. It is fast superseding the windmill and every other form of supplying water, because it is the best.

The Hot-Air Pump is within the purchasing power of the modest dweller in any Country Cottage. It can now be bought at the very low price of \$108.



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Portable. Size, 12 ft. long, 8 ft. wide, 8 ft. high. Soundly constructed of high grade material. Fitted complete with benches, floor and glass. Freight paid. C. H. MANLEY, Premier Mfg. Works, St. Johns, Michigan.

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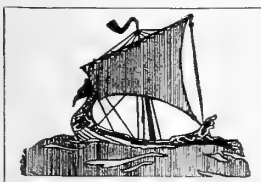
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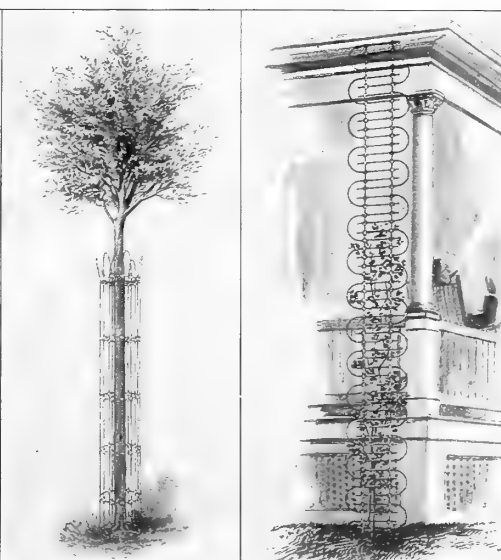
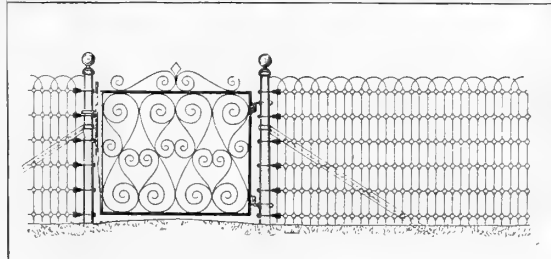
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every one of which is a specimen—symmetrical, bushy and of the most exquisite blue.

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100 CHOICE NAMED VARIETIES

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Marvelous New Rose "Baby Rambler"

Strong, 2-year-old plants, 85c. each, or 2 plants for \$1.50, postpaid.

Also four other sizes at right prices.

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The rose that **Blooms**. Blooms *all* the time, with a whole lot of beautiful crimson clusters—not two or three roses at a time, but a continual mass of rich, bright crimson, from November to May, indoors. Blooms outdoors all summer—will not "winter kill."

**Two-year-old plants are in bloom
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Sent in fibre pots, with the soil on the roots

All ready for your window—great for the house or conservatory in winter.

"Baby Rambler" is a dwarf—grows two feet high—a bushy, well-shaped rose, with shiny, dark green foliage, seldom troubled by insects or disease. It is exceptionally popular and has won highest awards both in America and Europe.

Write to-day for our **New Floral Guide**, containing list of the choicest roses for both outdoor and indoor fall planting—free if you mention GARDEN MAGAZINE.

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WEST GROVE, PA.
Growers of the "Best Roses in America."

A Hundred Thousand Bulbs for School Children

IT was six years ago that the first step was taken in Cleveland, O., to interest the school children in gardening. It began as a home gardening club in connection with one of the settlement houses right in the heart of the city. Seeds of the most vigorous-growing common annuals were bought by the pound and divided into several packets that represented one cent's worth. Prizes were offered for the best gardens. So enthusiastic were the children about their gardens that attention was drawn to the public schools as the natural channel for extending the work. In the winter of 1900 a home gardening association, including many connected with the schools, was formed, with Mr. E. W. Haines as president.

Each primary school was supplied with printed cards, having on one side the list of seeds, with spaces for marking the quantities wanted, and for the name and room number, while on the other side were simple directions for the preparation and care of the garden. These cards and the money to pay for the seeds were returned to the teachers, and an order forwarded to the committee of the association. The scholars paid one cent for a packet of seed, which was purchased in bulk and measured off according to the size of the grain. The number of packets to the pound varies greatly, of course; a pound of verbena seed will give 950 packets, whereas a pound of sweet peas yields but seventy-five packets. At first practical and explicit directions for preparing the soil and planting the seed were printed on the envelope, with variety name. This was modified later, and the instructions are now given on separate cards.

The first year the scholars bought 48,868 packets, and in subsequent years orders came from all the grades, with the following results:

In 1901 there were sold 121,673 packets; 1902, 116,489 packets; 1903, 137,095 packets; 1904, 152,106 packets and 27,440 gladiolus bulbs; 1905, 220,663 packets and 13,104 gladiolus bulbs; making a grand total of 796,894 packets and 40,544 bulbs.

In 1903 5,000 packets were supplied to improvement associations and schools of Cleveland; while in 1904 the out-of-town orders increased to 57,857, and this year the figures are about 100,000.

Vegetables were added to the list this year, including beets, beans, lettuce, onions, corn and radishes, beside the following twelve flowers: aster, balsam, cornflower, coreopsis, four-o'clock, marigold, nasturtium, morning glory, poppy, phlox, sweet pea, and gladiolus bulbs.

The work of putting up these seeds gives employment to from twelve to eighteen women for two months or more. They each put up 1,400 to 1,500 packets a day, and last year, the seeds and bulbs ready for delivery, filled two large express wagons.

What are the results? In some of the schools 85 per cent. of the pupils have gardens. Last fall 30,000 children wrote letters describing their gardens.



The quality of Vick's Bulbs is known wherever bulbs are planted. They never disappoint.

BUY VICK'S AND GET RESULTS

Hyacinths, in fine mixture	{ \$.65 per dozen	Tulips, superfine, single mixed	{ \$.25 per doz.
" named varieties	.12 " each	" " double "	.25 " doz.
Narcissus, from 20 cents to 60 cents per dozen	1.25 per dozen		1.00 " 100,

At dozen and single prices we prepay mail or express charges. Hundred lots by express not prepaid.

Send for our Free Catalogue, which gives descriptions and prices of over 200 kinds of bulbs. It's an interesting book to lovers of flowers.

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The Garden Magazine

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Autumn Catalogue


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Linen—Glass—China—Silver
—EVERYTHING for the well appointed table should be washed with

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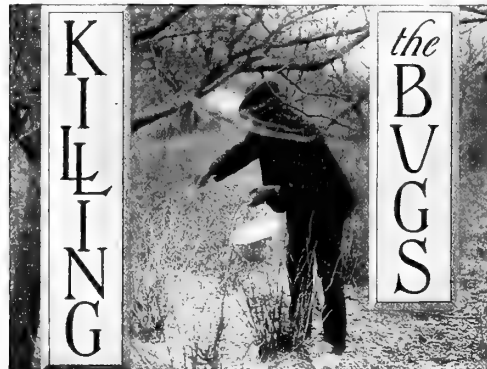
The Choicer the article the Greater the need of PEARLINE'S gentle, yet effective way of washing intelligent and thrifty women are those most

Enthusiastic about Pearlina

From the very first the enterprise has been self-supporting, and each year the money from the sales has paid for the seeds themselves, and also the printing, packing, etc., and also left a surplus which was expended on illustrated lectures on gardens and as prizes for the annual flower shows held in the school buildings. It is contrary to the policy of the association to give the seeds away, as experience has shown that one packet paid for has more value in the child's eyes and therefore receives more care than half a dozen packets to be had for the asking.


Cleveland was the pioneer in putting up penny packets of seed and selling them to the scholars.

STELLA S. MCKEE.



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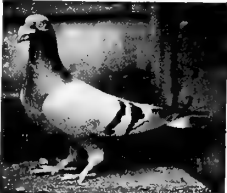
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Write to-day.

THE HOME CORRESPONDENCE SCHOOL,
Dept. 8, Springfield, Mass.

The Borers Are Active

DDURING September examine trees and shrubs for signs of borers. The young of the apple-tree borer confine their operations largely to the base of the tree and may be detected by the characteristic borings hanging from a small orifice. The very destructive peach borer works similarly at the base of peach trees, and its presence is usually indicated by the exuding gum. The young of the sugar maple borer, a most destructive insect, is usually found at work on the under side of the lower branches or along the trunk up among the limbs.

SUDDEN WILTING OF TWIGS

The young caterpillars of the leopard moth, a most serious pest about New York City, begin their operations in the twigs, and the wilting of them at any time during midsummer or later should lead to investigation and the removal and destruction of the infested tip which holds the grub.

THE PRACTICAL REMEDY

The only sure remedy is to cut out these borers, even though the tree is injured to some extent, because the grubs, if allowed to live, are likely to cause a great deal more damage than the cutting. Where only a few borers are detected they may be hunted by means of a hooked wire inserted into the hole made by the borer, and pushed as far as it will go. This usually kills the grub.

Some people have successfully used bisulphide of carbon for killing borers when the holes could be conveniently reached by the spout of an oil can. The poison is squirted in and the hole sealed with moist clay. Still, the other methods are better.

E. P. FELT,
New York State Entomologist.

Want Department

A special low rate is made in this department for the convenience of readers to advertise for a gardener, or for gardeners to offer their services.

Competent Gardeners

The comforts and products of a country home are increased by employing a competent gardener; if you want to engage one, write to us. Please give particulars regarding place and say whether married or single man is wanted. We have been supplying them for years to the best people everywhere. No fee asked.

PETER HENDERSON & CO., Seedsmen and Florists, 35 and 37 Cortlandt Street, New York City.

Gardeners' Register

High-class men, with good records, can be obtained at VAUGHAN'S SEED STORE, 14 Barclay Street, New York City. No fee.



Home Grown Lilies

Why buy elsewhere, when Horsford's Bulbs, grown in cold Vermont, will produce on a single stem of Auratum Lilies a bouquet like this. Not all of Horsford's Bulbs are as good as this one, but they are known to be better than the average by those who have used them. Autumn Supplement, ready last of August, will offer a long list of lilies, and other bulbs and plants, trees and shrubs, for autumn setting. An attractive Bargain List for those who have room to plant liberally. Many plants, especially shrubs and trees, ripen off their wood much earlier in this cold climate than farther south, and are ready to set earlier in the fall. You should ask for Horsford's Catalogue and Supplement before buying. To all who received spring catalogue of 1905, the Supplement will be sent when issued.

FREDERICK H. HORSFORD, Charlotte, Vermont

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Illustrated Catalogue free

WM. HENRY MAULE

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Arlington Tested Seeds

Our 1905 catalogue tells all about them. IT'S FREE.
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The AMATEUR GARDENER'S ROSE BOOK

By Dr. JULIUS HOFFMANN

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Longmans, Green & Co., Publishers
NEW YORK



A Hydrangea That Climbs

I WAS much interested in the account of the vines used for covering houses at Dayton, O., published in the May GARDEN MAGAZINE, but I did not find mention of the climbing hydrangea (*H. petiolaris*), which I consider the best of all climbing vines. It is perfectly hardy with us in Massachusetts, and the two last winters have been intensely cold—thermometer down to 32° below zero the winter before last. Neither winter injured our plant in the least, and no insect or disease has ever attacked it. It is the first plant in our garden to show leaves in the spring. The



111. The climbing hydrangea (*H. petiolaris*), which has four showy sepals and the leaves not lobed, is often confused with another Japanese vine, *Schizophragma hydrangeoides*, which has deeply lobed leaves and only one large white sepal to the sterile flowers

foliage is particularly attractive, too, and even if the plant had no bloom it would be worth growing. It will cling to stone, but not to wood. Every two years I string insulated telegraph wire (which is covered with rubber) across it. It is always in full bloom in June.

The plant shown in the photograph was set out eighteen years ago, and is now nearly forty feet high. It was slow of growth at first, but after it got a good start grew quite rapidly. I measured some of the new shoots of this year and found they had grown fourteen inches. Unlike most Japanese plants, it is not impatient of dry weather.

Massachusetts.

H. HEATON.

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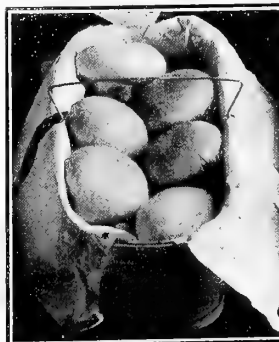
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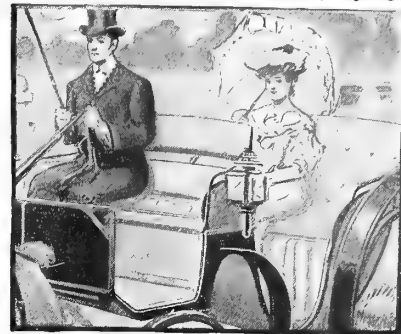
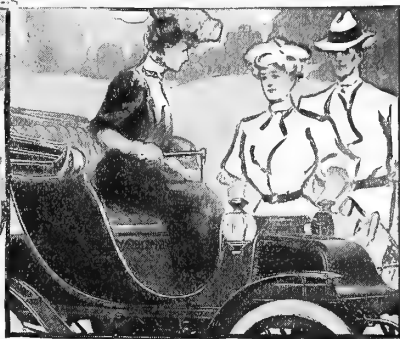
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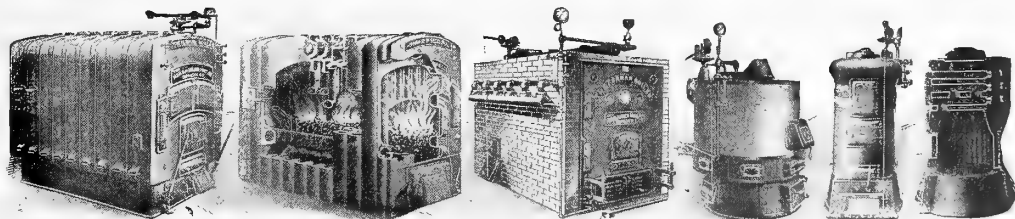
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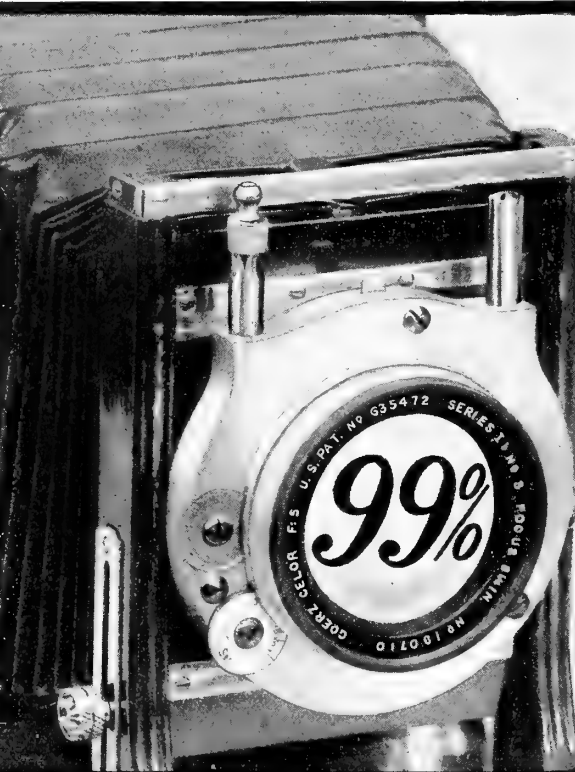
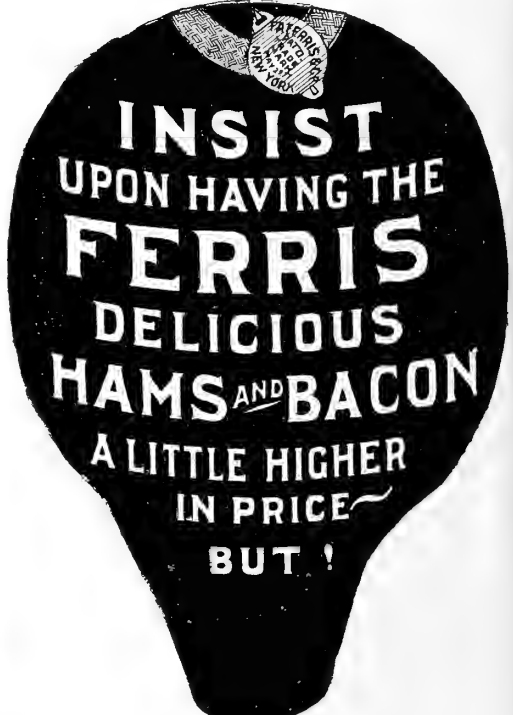
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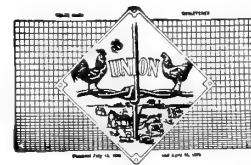
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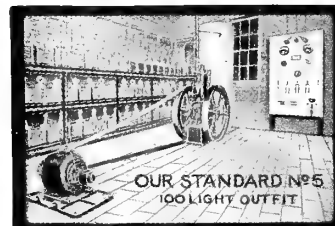
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For full list of Hyacinths, see our "Fall Bulb Catalog," mailed free on application.

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Selected Bulbs, 85 cents per dozen, \$1.75 for 25, \$6.50 per 100.
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"Jumbo" Bulbs, 50 cents each, \$5.00 per dozen.

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OCTOBER A Complete Manual for Autumn Planting

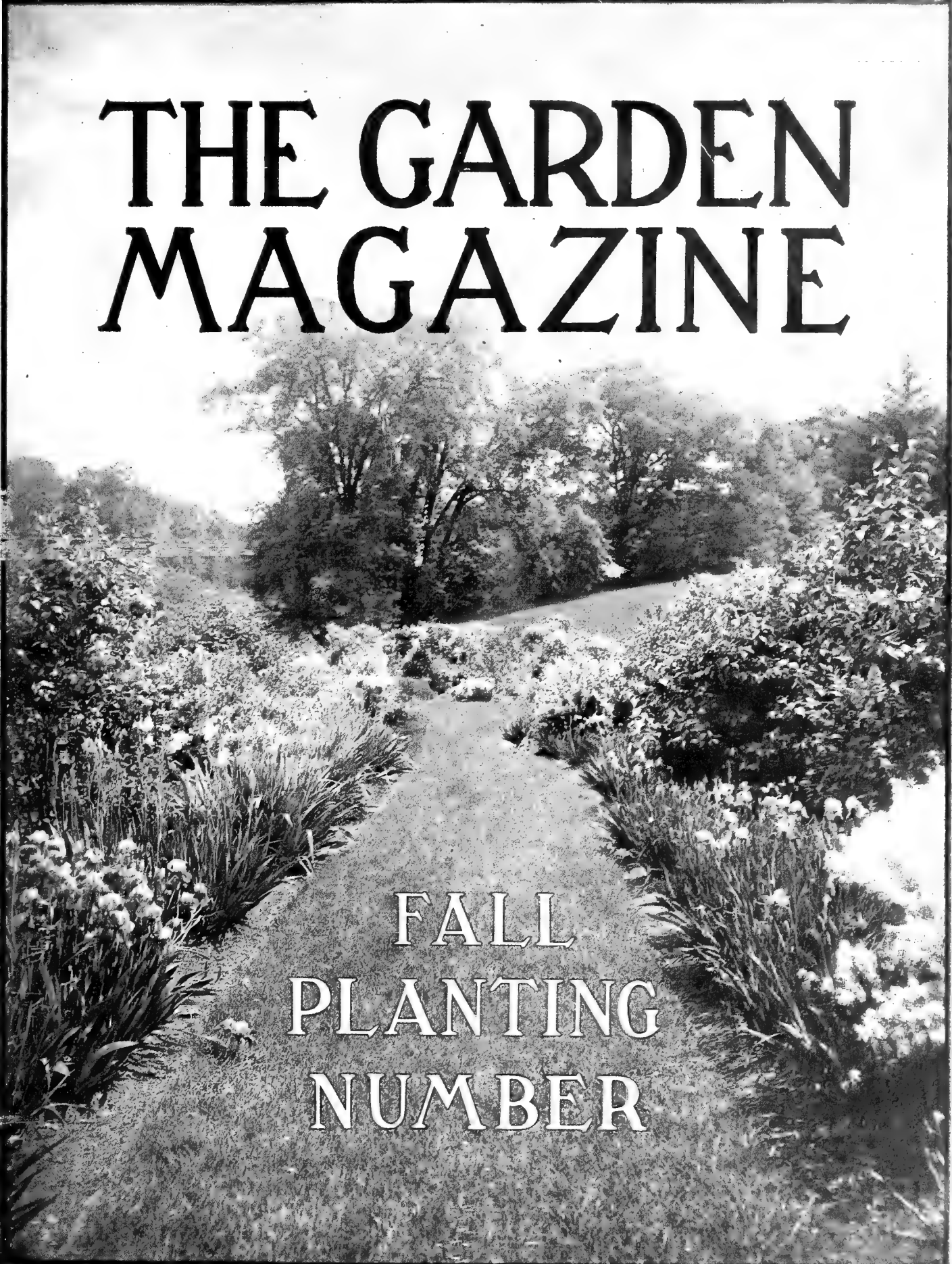
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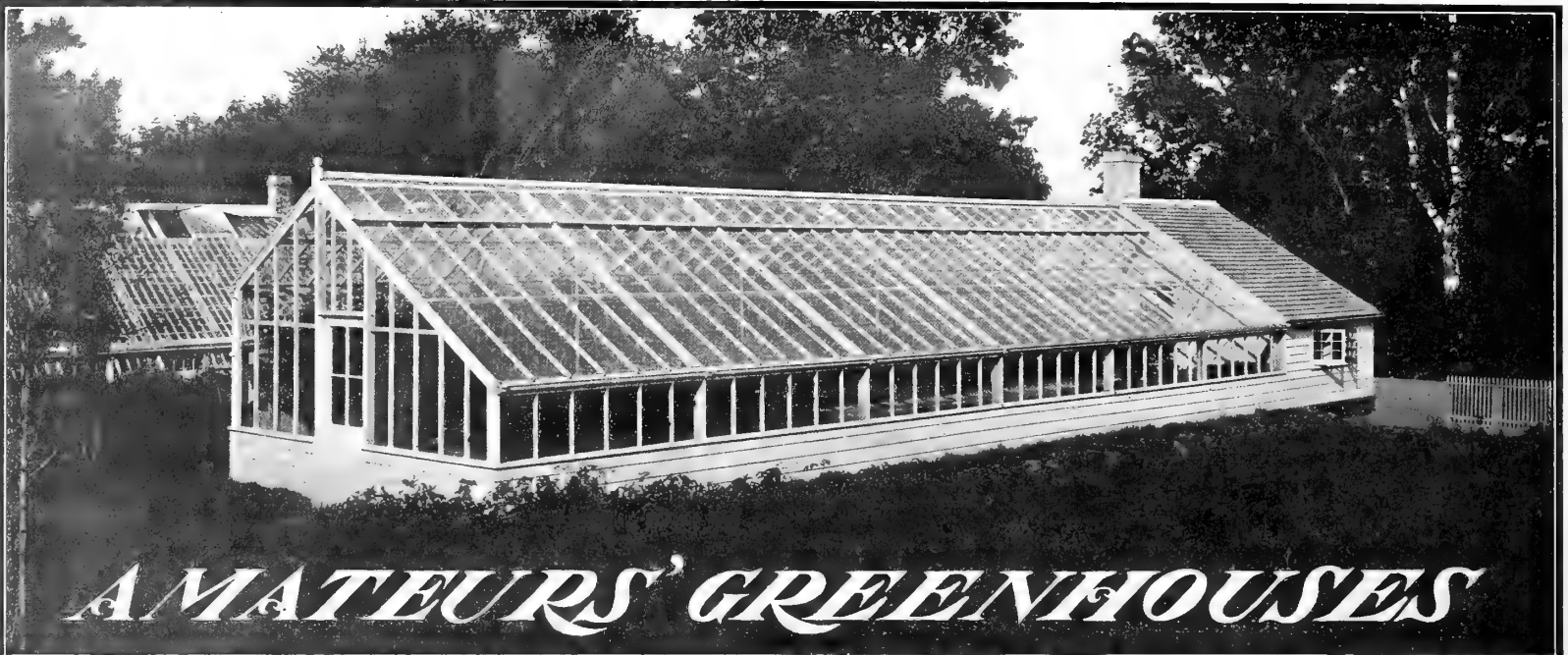
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• WORK •



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THINK of having hot-house grapes at Christmas, peaches in May, fresh home-grown vegetables all winter, cut flowers for every day of the year, and plants for Christmas and Easter gifts! All this is possible with a greenhouse—and a small one at that.

Many people who would like to go into this thing in a modest way have an impression that it involves a large expenditure and means a hopelessly great cost of maintenance. But we have made the pleasure of a practical greenhouse a delightful possibility to the person of moderate means.

To meet this demand for a small greenhouse embodying the essentials and improvements of houses costing thousands of dollars, we have designed the fifty-foot greenhouse illustrated above, with two compartments and a little potting house. Dividing it into compartments permits of having two temperatures for growing plants of different requirements.

All the woodwork is Red Gulf cypress—most durable where continual moisture is present.

The frame consists of cast iron posts, wrought iron rafters, angle iron purlins, and our patent angle iron plate, freeing the roof from ice.

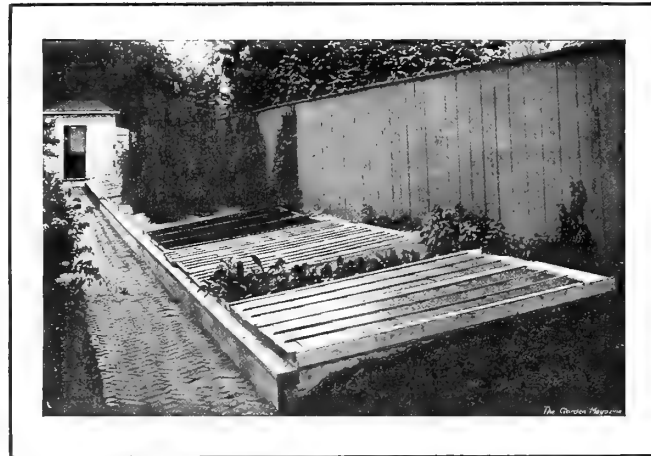
Ventilation is provided by two continuous lines of sashes at the ridge, operating by our patent self-locking apparatus.

We will give you a price on this house, f. o. b. Irvington, New York, and send along simple working plans so your local mechanic can erect it; or we will do the entire thing, from turning the sod to turning on the heat, ready for your plant friends.

We also have a simple lean-to house at still less cost that may just suit you, and others that are told about in our

booklet, "Starting a Small Greenhouse." This also tells a bit about the care of roses, carnations and violets, and a lot of other things of vital interest to the amateur. Write and tell us whether you want a house for the pleasure of it, or to make it go a ways toward paying for itself. We can then help you accordingly.

There is still ample time to set out coldframes and have fresh lettuce, spinach and other vegetables from Christmas until spring; pansies, violets and other flowers Easter-time, at no other cost than the mere expense of the coldframe and seeds. Everyone can own a few frames. They are inexpensive and require little room.



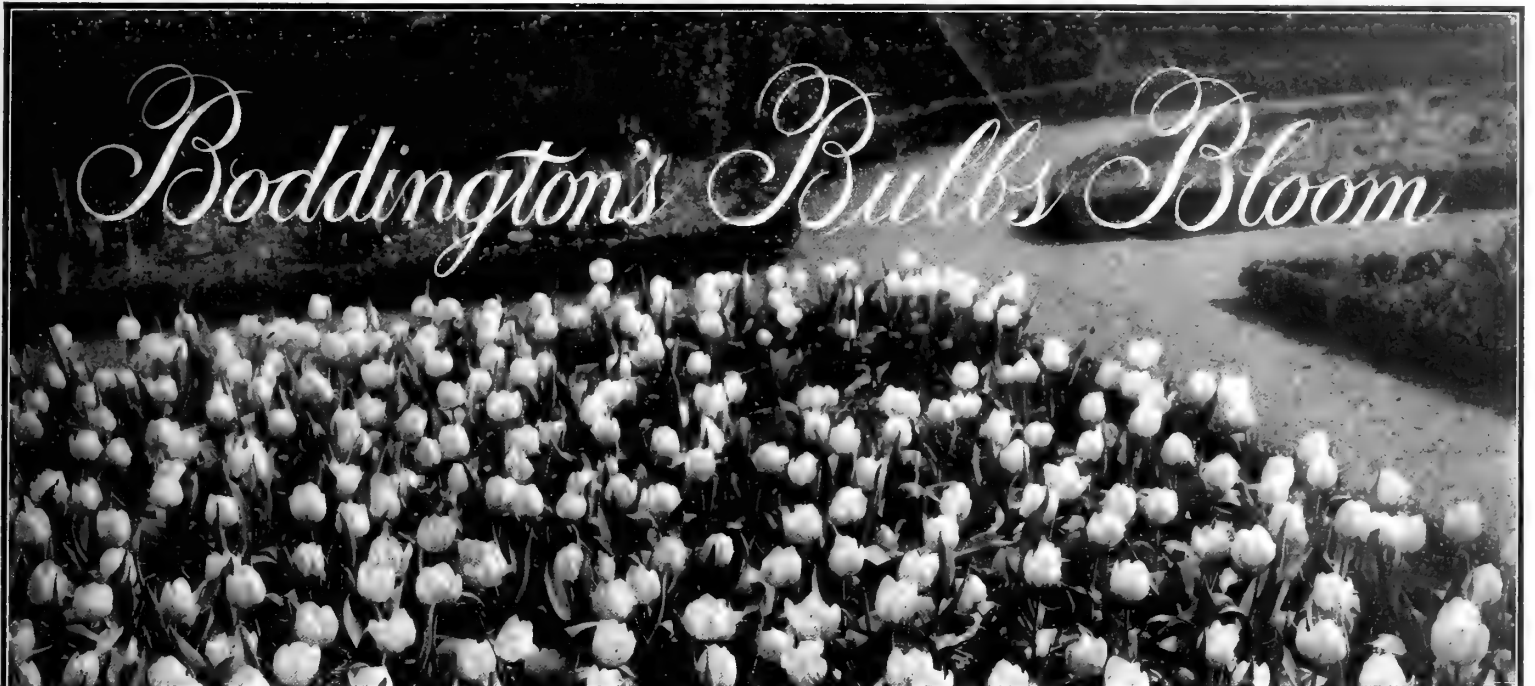
We have just received from the press a charming booklet on coldframes. It is bountifully illustrated, showing just the things the prospective buyer—or for that matter the owner—wants to know. Then it goes pretty thoroughly into the care and culture end, telling the how, when, and what to plant. It suggests for the profit side—where to sell—how to deliver in an attractive way—and all that sort of thing.

We call the booklet "The Two Ps"—the Pleasure and Profit of Coldframes. We want you to have one.

Then for cold frames booklet, write for "Two Ps." For Starting a Small Greenhouse, "Two Ss."

By a consolidation of the three leading greenhouse builders of the country, thus owning the patterns and patents of each company, we are enabled to offer more modern appliances and improvements than were ever before possible in a single greenhouse—and lower prices.

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 BOSTON BRANCH: TREMONT BLDG.



SECURE spring gorgeousness in the garden by planting Hyacinths, Tulips, Daffodils, Crocus, etc., now. **Quality Bulbs Contain the Bloom**—if you cut a **good bulb** through the center, vertically, you will observe a well-developed **flower spike**—however, you buy bulbs to bloom, not to cut, so you must fall back upon the reliability of the firm you buy from. I sell the leading florists, public parks and private gardens in America, because **my bulbs bloom. Quality is my first consideration.** The following list contains a very general collection—but if you need a more varied selection, containing the choicest named Hyacinths, Tulips, Daffodils, etc., **write for my beautifully illustrated descriptive Autumn Bulb Catalogue with cultural directions, mailed free.**

BODDINGTON'S "QUALITY" HYACINTHS to Color for Bedding

Crimson, Pink, Rose, Pure White, Blush	Per doz.	Per 100	Per 1,000
White, Light Blue, Dark Blue, Yellow	\$0.60	\$4.00	\$35.00

BODDINGTON'S "QUALITY" CROCUS

Boddington's "Quality" Crocus. Named varieties—white, striped, blue, variegated yellow	Per doz.	Per 100	Per 1,000
	\$0.15	\$0.75	\$6.00
Boddington's "Quality" Crocus, mixed all colors	.10	.50	3.50

SINGLE NARCISSUS

Golden Spur, deep yellow and large flower	Per doz.	Per 100	Per 1,000
	\$0.60	\$3.00	\$25.00
Emperor. Largest trumpet variety, rich yellow	.60	3.00	25.00
Empress, white and yellow. Finest of the two-colored trumpet varieties and a fitting companion for Emperor	.75	4.00	34.00
Poeticus. One of the most beautiful of the Narcissus family, pure white flower with golden yellow cup and distinct rim of scarlet, especially adapted for outdoor planting	.15	.75	4.50
Trumpet Major. Large flower, pure golden yellow; the best for early forcing	.35	2.00	15.00
Boddington's "Quality" Single Narcissus Mixture. Suitable for borders and beds, or naturalizing and acclimating in grass or woodlands	.15	2.25	20.00

DOUBLE NARCISSUS, OR DAFFODILS

Von Sion. Old-fashioned yellow Daffodil	Per doz.	Per 100	Per 1,000
	\$0.35	\$2.00	\$15.00
Alba Plena Odorata. Fragrant, snow white, gardenia-like flowers. One of the hardiest of the Narcissus family	.20	1.00	7.00
Incomparable, fl. pl. (Butter and Eggs.) Rich yellow and white, very double; good forcer or for outside	.25	1.25	9.00
Boddington's "Quality" Double Narcissus Mixture. Suitable for borders and beds, or naturalizing and acclimating in grass or woodlands	.25	1.25	10.00

NARCISSUS JONQUILLA, OR JONQUILS

Double Sweet-Scented. Fine deep yellow	Per doz.	Per 100	Per 1,000
	\$0.30	\$2.00	\$15.00
Single Sweet-Scented. Deep yellow	.15	.75	5.00
Campernelle Rugulosus. Very fragrant; largest Jonquil. Canary yellow flower	.20	1.15	7.50

LILIUM CANDIDUM

St. Joseph's, or Annunciation Lily. Mammoth bulbs	Each	Per doz.	Per 100
	\$0.15	\$1.50	\$8.00

SPANISH IRIS (Iris Hispanica)

Quality Mixture, all colors	Per doz.	Per 100	Per 1,000
	\$0.10	\$0.50	\$3.00

SNOW DROPS

Large Single	Per 100	Per 1,000
	\$0.75	\$ 6.00
Large Double	1.25	10.00

BODDINGTON'S QUALITY TULIPS for bedding

I recommend the following tulips, to color, for bedding, as they grow to the same height and bloom simultaneously.

SINGLE OR DOUBLE TULIPS

Scarlet, Red, White, Pink, Yellow, Striped, Red and Yellow, to color	Per doz.	Per 100	Per 1,000
	\$0.35	\$2.00	\$15.00
Boddington's "Quality" Mixed Single Tulips, all colors	.30	1.50	12.00
Boddington's "Quality" Mixed Double Tulips, all colors	.30	1.75	12.50

ALLIUM

A. Neapolitanum. An excellent forcer for winter flowering, with immense trusses of white flowers	Per doz.	Per 100	Per 1,000
	\$0.15	\$1.25	\$8.00

STAR OF BETHLEHEM

Ornithogalum Arabicum	Each	Per doz.	Per 100
	\$0.05	\$0.50	\$2.75

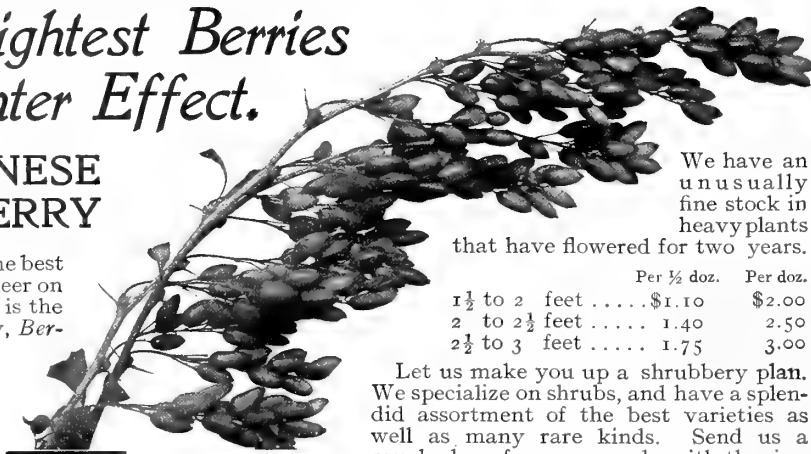
ARTHUR T. BODDINGTON, Seedsman, 342 W. 14th St., New York

The Brightest Berries for Winter Effect.

JAPANESE BARBERRY

Incomparably the best plant for winter cheer on the home grounds is the Japanese Barberry, *Berberis Thunbergii*, which holds its brilliant red berries all through the winter, and even until May. Nothing in the winter landscape gives such an air of warmth and cosiness as these brilliant red berries against a background of snow, nor can anything exceed the grace with which they hang in long, slender sprays from the branches. Most other bright berries are picked off by the birds, but these are never eaten.

Why not plant a group near the front steps? Or, better, make a hedge across the front of your grounds. For either purpose, Barberry has no rival among bright berried shrubs.



We have an unusually fine stock in heavy plants that have flowered for two years.

	Per 1/2 doz.	Per doz.
1 1/2 to 2 feet	\$1.10	\$2.00
2 to 2 1/2 feet	1.40	2.50
2 1/2 to 3 feet	1.75	3.00

Let us make you up a shrubbery plan. We specialize on shrubs, and have a splendid assortment of the best varieties as well as many rare kinds. Send us a rough plan of your grounds, with the size, and we will gladly suggest the shrubs that will best be suited for your place.

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THADDEUS N. YATES & CO.
Mt. Airy Nurseries Philadelphia, Pa.

Success with Vegetables Planted Outdoors in Late Fall

Photographs by the author and from Vermont Experiment Station

IN October, 1904, we made our first experiment with fall planting on a very small scale, only a few feet of row for each vegetable. The results were sufficiently satisfactory to inspire the vow that 1905 should see a larger fall-planted garden.

Our best crop was lettuce. We picked plants just beginning to head the third week in May, and they were tender and good. About two dozen full-sized heads of the finest quality were picked between June 14th and June 21st. After that they shot up to seed. Heads from this spring's planting were not ready until two days later than those from fall-sown seed. There were five varieties, but



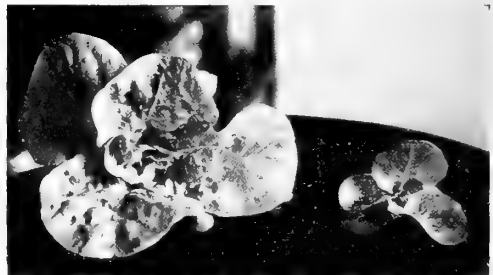
Parsnips and celery sown in October got an early start in the spring, and by the end of May (when photographed) were respectable-sized plants

only two made any showing—Grand Rapids and Half Century.

Chard also gave good results; large leaves with brittle stalks a half inch wide were picked before the April 1st planting produced anything but greens.

American cress came up thickly and flourished. On June 17th they were bushy plants six inches high.

Hollow Crown parsnips were very satisfactory, so far as looks go. Their edible quali-



Lettuce sown on October 28th; started to grow March 31st; grew rapidly into large, tender heads. Photographed last week in May. The small plant shown above is from spring-sown seed

ties were not tested at this writing; they are kept for use quite late in the season. On June 17th the tops measured twenty inches and the roots eleven inches, being very straight and even, tapering from a little over a half inch thick at the top.

Danvers carrots planted in the fall were the same size as the April 1st planting, and were gathered for cooking on June 23d. On the same date celery plants were transplanted, both roots and leaves being about six inches in length.



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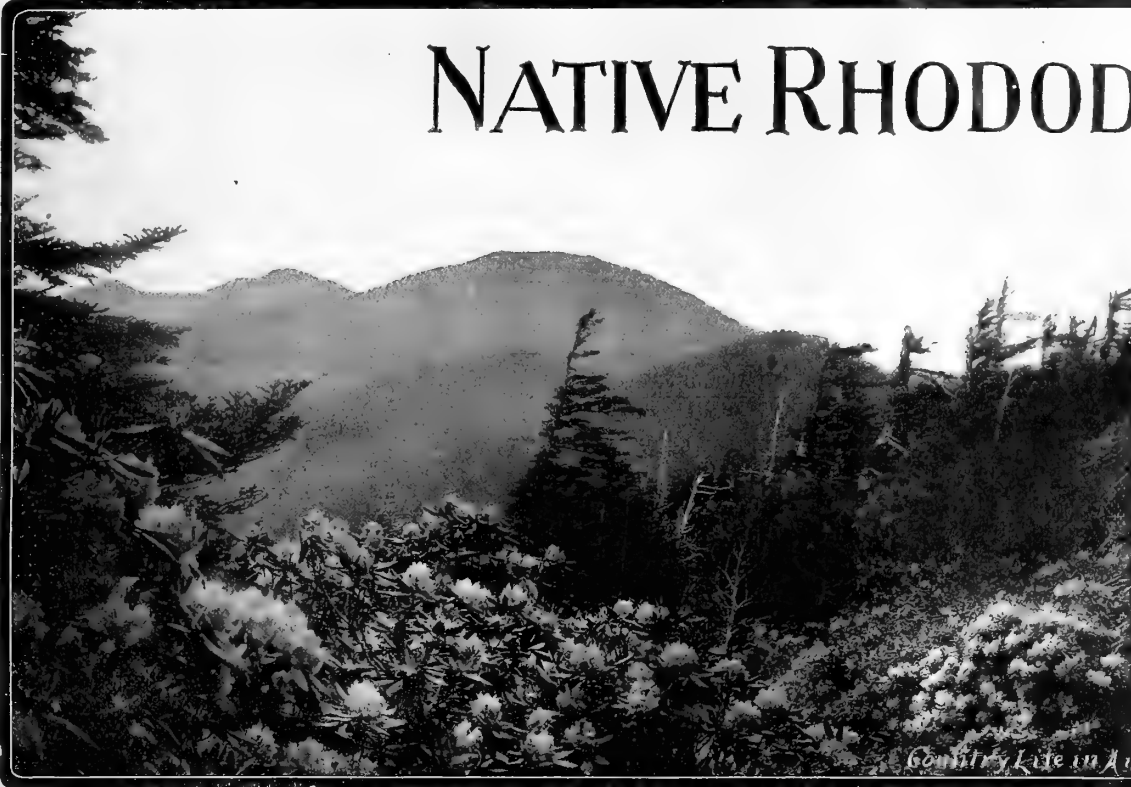
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The Rare, True Native Species



Rhododendron catawbiense as growing in the Carolina Mountains. (Mt. Mitchell, the highest peak east of the Rockies, in the distance).

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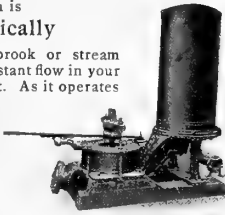
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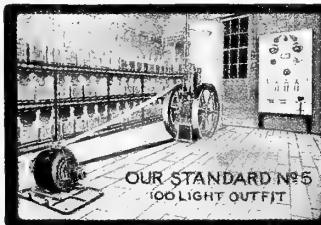
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THE LEEDLE
FLORAL COMPANY
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ROSES

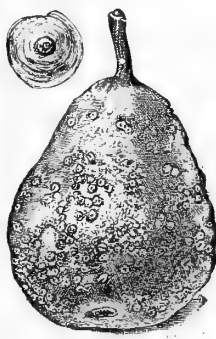
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We aim to kill scale and not trees. One spraying will not kill all the scale. Many of them get under the rough bark. They are very minute, but their multitude makes the San Jose Scale a plague like the plagues of Egypt.

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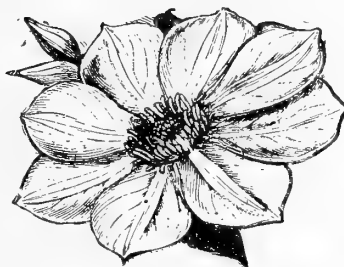
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We can supply fine 2-year-old, strong, heavy, field-grown roots which, if planted in October, will blossom next August.

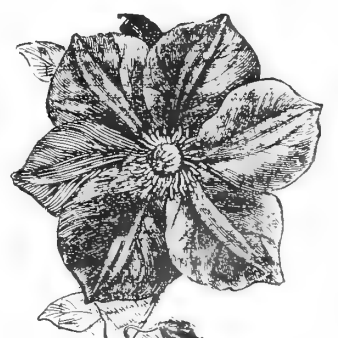
VARIETIES: Henry VII. (white);

Madame Andre (red); Jackmanii (purple). Price, 55c. each; \$6.00 per dozen.

We also offer for fall planting fine trees, shrubs, hardy flowers and fruits. We make a specialty of fruit trees and bush fruits.

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S. C. Buff Orpingtons White Wyandottes S. C. Black Minorcas

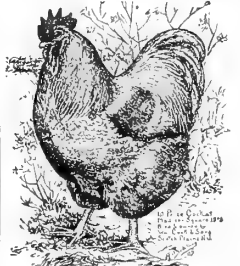
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4 weeks, sell for \$2.50 to \$6.00 doz. Good money breeding them everywhere; women do well. We were the first—our boys, breeding methods; and famous Plymouth Rock big thoroughbred Homers revolutionized the industry. Visitors welcome at farm; correspondence invited. First send for our Free Book, "How to Make Money with Squabs," and learn this profitable business. Ask also for new printed matter.

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Superintendent COLNE KENNELS
Petite Cote, near Montreal, Canada



Our only experience with flowers planted late in the fall was with sweet peas, which opened June 15th, when spring-sown plants were only in bud.

The date of all these fall plantings was October 26th. Evidently that is too early for radishes, for they came up in November, and, of course, perished during the cold weather. One lone French Breakfast germinated this spring, and was picked and eaten May 10th. It was sweet and tender, while all the spring plantings were tough and hot on account of a slow season. This year we shall wait until after election day to sow radishes. No other seeds showed above ground before spring, from which we judge that the last week in October was none too early to plant them.

When settled cold weather came we covered the seeds with manure and straw, half of which we removed the middle of March and the other half the first of April. Lettuce, the first of the seeds to germinate, showed above ground on March 31st.

Several kinds did not come up at all, but we do not blame fall planting for the failure.



Corn salad sown in August or September, and lightly protected with leaves or straw over winter, is ready for use as soon as the snow goes. A substitute for lettuce

The mistakes of an ignorant Italian during the absence of the "head gardener" had something to do with it, as also experimenting with some seeds that were suspiciously old, and again the risking of some very tender kinds. We planted them unusually deep, thinking it would be better protection, but perhaps that was a mistake. The covering of manure and straw was accidentally put on thicker than was meant, about six inches, and possibly was too much. Being cramped for room, we made the rows one foot apart, thinking we could watch for the seeds to germinate and then carefully work around them

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For Conservatory or Window Garden

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- 12 Hyacinths, double, named, various colors
- 12 Roman Hyacinths, various colors
- 12 Single Tulips, various colors
- 12 Double Tulips, various colors
- 6 Narcissus Large Trumpets, various colors
- 6 Narcissus Medium Trumpets, various colors
- 6 Polyanthus Narcissus, various colors
- 6 Double Narcissus, various colors
- 2 Chinese Sacred Narcissus
- 6 Campernelle Jonquils
- 24 Crocus, various colors
- 2 Achimenes
- 6 Allium Grandiflorum
- 4 Babianas, assorted
- 12 Freesias, white
- 6 Freesias, yellow
- 6 Winter Fig. Gladiolus
- 2 Gloxinias
- 6 Spanish Iris, assorted
- 6 Ixias, mixed
- 2 Lachenalias
- 4 Ornithogalum
- 6 Oxalis, various
- 12 Anemones, single and double
- 2 Callas, Little Gem and Large White
- 2 Cyclamen Giganteum, assorted
- 6 Ranunculus, assorted colors
- 6 Sparaxis, assorted colors
- 2 Arums (Red and Black Callas)
- 2 Bermuda Easter Lillies
- 4 Zephyranthes, assorted
- 6 Calochortus, mixed colors
- 6 Brodiaeas, mixed colors
- 6 Chionodoxa Gigantea
- 4 Fritillaria Meleagris
- 2 Guernsey Lillies
- 6 Scilla Amoena
- 6 Tritelia

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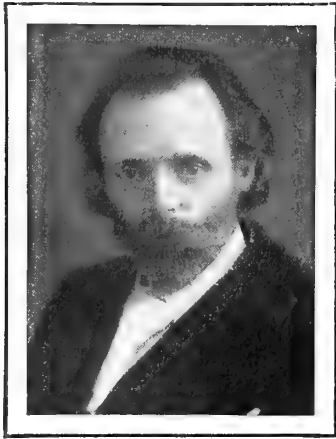
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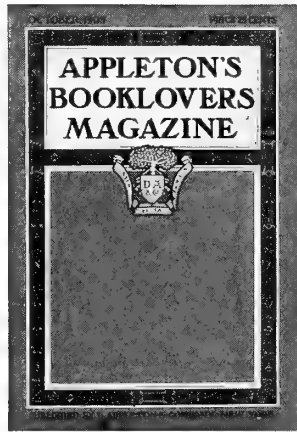
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with hand tools; but, as it turned out, we dared not stir the soil for fear of disturbing the seedlings.

Fall planting is much to be preferred to spring planting, especially March planting. March cannot be recommended as a month for outside work. In the first place, the eager amateur gardener is tempted to dig his ground too soon. He could not make a worse mistake, for unless the soil is dry enough to crumble the digging will cause it to become coarse and lumpy, and the effects will last throughout the season and may even extend to future seasons. The most favorable thing that can be said of March sowing is that it makes less to do in April, when everything is happening at once, but the gain on April plantings is really very little. Radishes planted March 29th were only a week earlier than those sowed fourteen days later. Beets planted March 29th and April 11th gave their first pickings on the same day, and the same thing happened with peas.

Not the least of the advantages of fall sowing is that the gardener can do his work on a delightful mellow day in October.

New York.

I. M. A.



The Planting Season

THE big planting season for the greater part of the Pacific Coast is in January. There is no fall planting season such as there is in the East. For palms and evergreens there is a planting season in September and there is an alternative season in March, but for the majority of deciduous trees such as in the East are planted about October the corresponding season in California is in the "cold" weather—January.

The season is controlled by the rainfall. The long, dry summer taxes the land for all its available moisture, and it is useless to attempt planting until after the first winter rains have descended sufficiently to moisten the soil to a good depth. It is just as important, however, to plant soon after the beginning of the wet season, because the trees will be much benefited by the rainfall while it is becoming established. Should the season of rain be a short one a late planted tree runs the risk of not getting a proper quantity of water during the first season. This of course means a shock to the plant more or less severe, according to the season. Where irrigation can be practised the planter is of course independent of the rains, but those conditions are not likely to apply to the amateur gardener. The two factors—which are the same as in the East—are (1) have the tree dormant, and (2) have the soil in a properly moist condition to work well.

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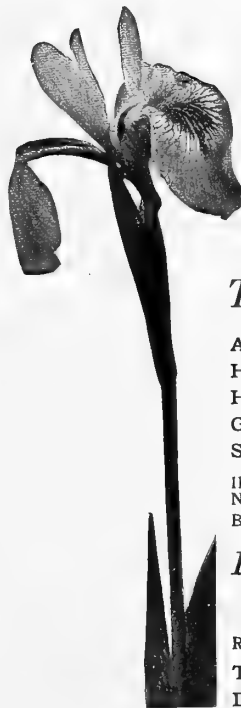
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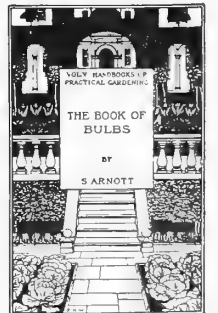
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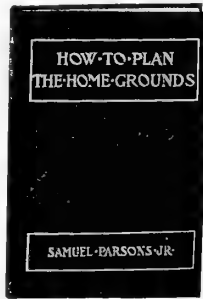
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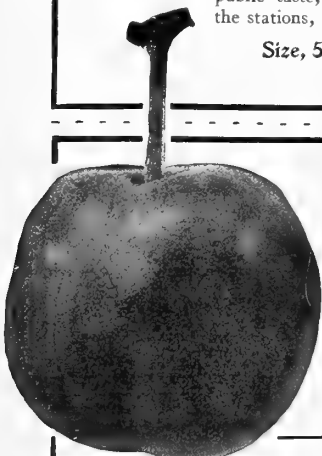
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Nature Club of America

PUBLISHERS' ANNOUNCEMENT

THE identification of our house with Nature publications has brought us into intimate relations with those who are interested in the furtherance of what may be called the "out of doors" movement. Our aid in this connection has been constantly solicited in one form or another, and it is with the utmost pleasure we respond whenever practicable.

Origin of the Nature Club Idea

On one point in particular requests for suggestions occurred with such uniformity that we at last came to look upon it as a feature naturally incidental to the distribution of the NATURE LIBRARY and began to prepare in advance from time to time outlines for courses of investigation and study appropriate to the particular season of the year that might be pursued with the NATURE LIBRARY as the principal text-book. We learned also that teachers in various districts had organized classes for this purpose, while in others congenial spirits, linked by a common enthusiasm for Nature study, had formed clubs for its furtherance and the mutual exchange of ideas and experiences.

The potentialities of such clubs, socially, educationally, and even patriotically, struck us forcibly, and we resolved to interest ourselves actively in their extension.

Following out this project, we have undertaken the publication of a periodical pamphlet giving all the information necessary for the formation of such organizations, and for programs and courses of study calculated to sustain interest and direct their activities along the most fruitful lines. To confer the authority of science and scholarship upon this publication, we secured the services of Mrs. Anna Botsford Comstock, the noted author, entomologist, lecturer and illustrator, of Cornell University, as editor.

This delightful little publication under her able direction is not only a very valuable instructor to serious Nature students, but will prove entertaining—indeed, we believe, in many ways a revelation—to the unfortunately large class of people who live oblivious of the marvelous ways of Nature.

Though associations for this purpose need little in the way of formal organization, it is desirable, in order to give definiteness and precision to their aims, to adopt a constitution and appoint executive officers. We have therefore drafted a form which is just sufficient to stiffen into consistency what otherwise might be desultory and haphazard.

We referred above to "the social, educational and even patriotic potentialities of such clubs." Their social possibilities are obvious. They need not be exclusively for the purpose of Nature study, but may be associated with reading societies, sewing circles, and similar organizations for the promotion of culture and sociability.

The educational value of Nature study has become so generally recognized as to need but a word here. There is no form of information which is such a perennial source of the purest pleasure as that bearing on the woods, fields and streams and their denizens. To the man equipped with such knowledge innumerable "still small voices," inaudible otherwise, tell charming tales. The chirp of a bird, the fall of a leaf, the flash of an insect, suggest fascinating histories to his mind. To him the world is the most entrancing of libraries.

For the young there is no study comparable in educational value to that of Nature. The childish mind fails to grasp the bearing of the disciplinary courses of the school. They are dead and meaningless to him, but once interested in Nature an insatiable curiosity is awakened, leading to that independent investigation and correlating of facts that is the chief end of all true education.

Whatever is beneficial socially and educationally is of course important from the patriotic view point, but there are other reasons why the promotion of Nature study has a patriotic significance. Humanity after all is but a part of Nature, and she bears in upon us on all sides. In some of her forms she is beneficial to us, in others harmful. A

thorough knowledge of her is essential to our greatest comfort and prosperity, but it is a fact that useful creatures are being ruthlessly extirpated under the mistaken notion that they are harmful, while noxious varieties flourish either through ignorance of their injurious character or the manner of exterminating them. Of the latter the mosquito is a notorious example, while from the NATURE LIBRARY we learn that most varieties of hawks, instead of being enemies to the farmer or wholesale destroyers of innocent bird life, render an ample margin of real service over the little harm they do.

By promoting exact knowledge of forms of life that are beneficial or prejudicial to human activities in their various forms, and means of destroying and encouraging them as the case may be. Nature Clubs may render patriotic service of a positive character.

One of the great charms of such study lies in the fact that its field is but partially explored. In other sciences the beginner can do no more than traverse ground already minutely charted, but in Nature study a wide-awake boy may unearth a fact of novel interest to veteran naturalists. For example, in the NATURE LIBRARY we read a complete life history of the "Spittle Insect," which every country lad has amused himself by picking out of his odd little patch of froth, yet is here first written, and there are many other such opportunities for contributions of real value to the general store of human knowledge.

Naturally it is chiefly to young folk and those interested in their up-bringing that such clubs will be of the greatest service, but their value is by no means confined to that class. A taste for natural history once formed never stales. Nature is multiform and inexhaustible, and she is as new after a life-long friendship as in the first flush of new-made acquaintance.

Knowing that there were many who would like to avail themselves of the advantages offered by our Nature Club project, but who would prefer not to identify themselves with local associations of that kind, we have formed what we call the "National Nature Club," which entitles its members to our booklets of Nature studies and will link them with others of similar interests all over the continent.

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It is gratifying indeed to us that our publications are proving so potent a factor in the popularization of Natural History in this country and we have no diffidence in acknowledging that our efforts toward the extension of Nature Clubs are largely due to the fact that as publishers of the NATURE LIBRARY we secure a direct advantage from every movement that tends to increase the interest in Nature subjects. With this fact in mind, we are prepared to quote reduced prices and special terms to those who take the initial steps toward forming new clubs in localities where none now exist. Write for full particulars.



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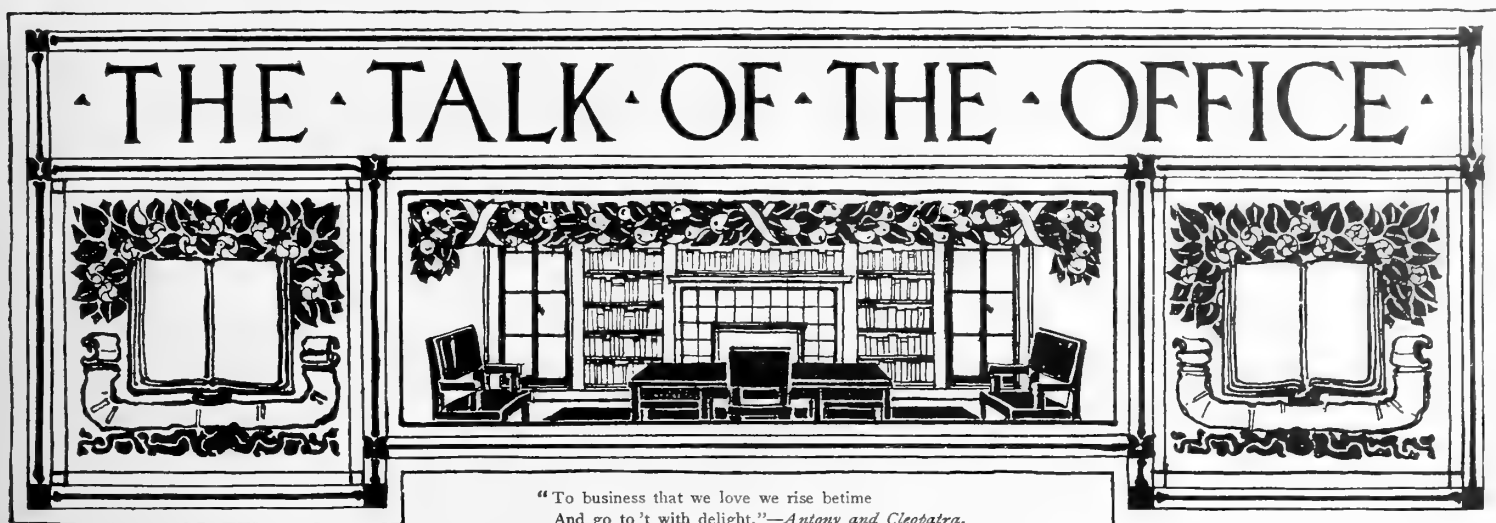
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"To business that we love we rise betime
And go to 't with delight."—*Antony and Cleopatra.*

THE REASON FOR SUBSCRIBING

IT is even more profitable for us to have our readers buy THE GARDEN MAGAZINE at the newsstands instead of subscribing, but because the magazine is valuable as a book complete in half-yearly volumes, many persons wish us to supply issues they have neglected to buy on the newsstands. A safer way is to send \$1 for a year's subscription, in which case the subscriber gets the double numbers without extra price. It can be sent through your newsdealer or direct. Always state with what number the subscription should begin.

VOLUME I, "GARDEN MAGAZINE"

Eventually this volume will be extremely valuable, and many people will want it to complete their sets when it is unobtainable. We have a limited supply of this first volume in bound form. Price, postpaid, bound in cloth, \$1.35. We cannot supply separate copies of the February nor of the April numbers. Of the March, May, June, July and August numbers we have a supply for people who wish to fill their files.

THE GARDEN LIBRARY AND NATURE BOOKS

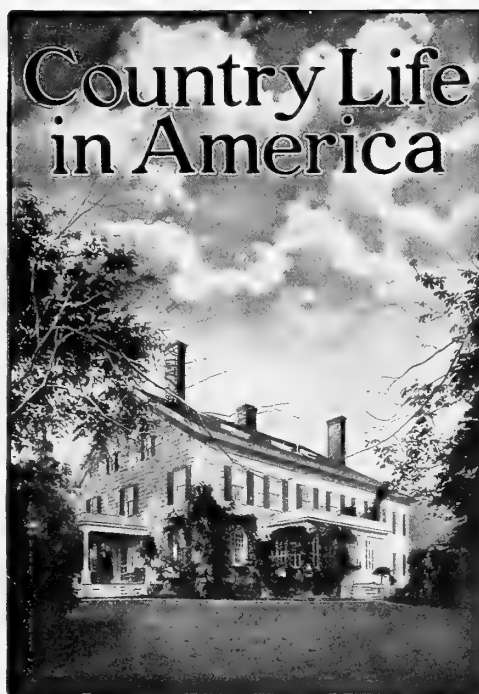
The first volume, "Roses and How to Grow Them," is now ready. The second volume, "Ferns and How to Grow Them," we expect to have ready toward the latter part of October. Other and larger books in the nature field will be "The Tree Book," by Miss Julia E. Rogers, of which we will give more particulars elsewhere; and "The Frog Book," by Miss Mary C. Dickerson. Meanwhile, new parts of "The Dog Book" are published each month, and "The Poultry Book" is finally complete.

CHANGE OF ADDRESS

We receive thousands of requests to change addresses every month, and regret that we are often obliged to inconvenience our customers because they give us only the address to which they wish the magazine sent. Our files are *not kept alphabetically* but geographically. For instance, a subscriber by the name of Smith is not kept under the initial of his name, but according, first, to the state in which he lives, and, next, to the town. Therefore, if he writes to us, and tells us to

send the magazine to Springfield, Illinois, we are hopelessly at sea to know from what state to transfer him. If our readers will remember this in making their requests for change of address, it will very much simplify our work.

"COUNTRY LIFE IN AMERICA" BUILDING NUMBER



The beautiful three-color cover for October

The best issue that has ever been printed of this magazine is the October number, which might easily be worth \$1,000 to any one contemplating building a home.

Here is a partial table of contents:

What Constitutes a Successful Country Home.
Reconstruction with an Ax.
A \$10,000 Home in the Virginia Mountains.
A House Built Around a Garden.
The Planning of a House.
How to Estimate What a House will Cost.
Building a Fireplace in Time for Christmas.
New Ideas in Window Construction.
The Sanitation of a Country House.
The Astonishing Advance in Concrete Houses.
The Plumbing, Heating, and Lighting of a \$15,000 Country House.
Sensible Walks and Drives.
And other interesting articles.

BOOK CAREERS

A few years ago "Bob, Son of Battle," by Alfred Ollivant, a novel now famous, was published and did not sell. A bookseller in Milwaukee became interested in the book and bought in lots of twenty-five; it began to have friends who recommended it, and now about 51,000 have been sold.

The same thing is happening with what might be called a Nature Novel, a story entitled "Freckles," though several thousand were sold at the start. A man in Chicago became enamored of the book, and began to buy in lots of 100 and gave them to his employees; a bookseller in Rochester got interested and sold several hundred. A half dozen instances like this have come up in a week, and we expect to see the day when we shall print the book in lots of 10,000.

To any reader of THE GARDEN MAGAZINE who will order the book from his bookstore and read it, Doubleday, Page & Company will agree to replace the book by any other published by them if it does not please him.

BINDING CASES

We will send for 75 cents a binding case in which to preserve the numbers as they come out. These must not be confused with the bound volume case, which can be used by a local binder to bind the volume in permanent form; this binding case is 50 cents, postpaid.

OCTOBER "WORLD'S WORK"

A glance at the partial table of contents, given below, for the October *World's Work*, shows the broad scope of this number of the magazine, which, our friends tell us, states the essence of the happenings of the time in convenient as well as attractive form; it is a succinct narrative of the progress of the world, complete, striking, valuable.

Our Financial Oligarchy, Sereno S. Pratt.
The Automobile in Industry, H. Olerich.
The Story of the Granger Lines, the second of the series "The Railroads and the Square Deal," Rowland Thomas.
Making a Living by Writing, Gilson Willets.
Our Mix-up in Santo Domingo the second of the series on the "Control of the Caribbean," by Eugene P. Lyle, Jr.
The Confessions of a Speculator.
Great Changes in the Railroad Problem, William Z. Ripley.
The Real Mr. Jerome, M. G. Cunniff.
Federal Regulation of Insurance, Senator John F. Dryden.
The New Science of Business.

Hardy Lilies for Fall Planting

ALL Lilies are better for fall planting, but sometimes many varieties of Japanese Lilies do not arrive before the ground freezes up. There is one method, however, by which they can be planted late in November or in December, and that is to cover the ground in which they are to be planted, before it freezes, with eight or twelve inches of stable manure. This will prevent the ground from freezing, and the manure can be removed and the lilies planted upon their arrival. We will not deliver any varieties of lilies which do not arrive until after hard freezing weather until spring, unless instructed otherwise. We re-pack in sand lilies arriving too late for fall delivery and store in a cold cellar until spring, when they are delivered as early as possible.

Lilium Superbum

If there is a more satisfactory lily or hardy plant of any kind than our splendid native Superbum Lily we don't know it. Either in the garden or for naturalizing it cannot be surpassed. In good soil it will grow eight feet high and produce twenty to thirty of its beautiful orange-red flowers in July, when bloom in the garden is not over plentiful. For vigor and reliability it is unequalled. Ten years ago we planted several hundred in a rough part of the grounds of one of our customers. They have been allowed to take care of themselves ever since and take their chance with the grass and other wild plants that have tried to crowd them out, but there are more of them and they were finer this season than ever before.

We have secured a very large stock of extra selected bulbs, which we offer at specially low prices for immediate delivery.

12 for \$1.50 25 for \$2.50 100 for \$8.00
 250 for \$17.00 500 for \$30.00 1,000 for \$55.00

JAPANESE LILIES

Longiflorum Lilies are ready in October; the other varieties we expect to receive early in November

	Per Doz.	100
Auratum. 8 to 9 inches	\$0.90	\$6.50
9 to 11 inches	1.50	11.00
11 to 13 inches	2.50	18.00
11 to 13 inches, selected bulbs	3.00	21.00
Longiflorum. The Longiflorum has large, pure white, trumpet-shaped flowers like the Bermuda Easter Lily, but is perfectly hardy. 5 to 7 inches . . . . .	.50	3.00
6 to 8 inches . . . . .	.75	4.50
7 to 9 inches	1.00	7.00
9 to 10 inches	1.60	12.00
Speciosum album. 8 to 9 inches	1.50	10.50
9 to 11 inches	2.50	18.00
11 to 13 inches	3.50	25.00
Speciosum Melpomene. Similar to Rubrum, but more brilliant. 7 to 9 inches	1.35	9.00
9 to 10 inches	1.75	12.00
Speciosum rubrum, or roseum. Pink. 8 to 9 inches	1.35	9.00
9 to 12 inches	1.75	12.00
Monster bulbs	2.25	16.00
Tigrinum flore pleno. Double Tiger Lily. The only double lily worth growing . . . . .	.70	5.00



Tigrinum Simplex. The well-known single Tiger Lily. Of the easiest culture, and worthy of general planting on account of its stately habit and fine effect in the landscape Per Doz. 100 \$0.60 \$4.00

Tigrinum splendens. Improved Single Tiger Lily65 4.50

NATIVE LILIES

Ready for immediate delivery

Canadense flavum. Our dainty, beautiful Lily; graceful and charming yellow flowers	1.00	7.00
Canadense rubrum. Red flowers. A most lovely and graceful lily. Fine for planting in the grass of orchards or meadows	1.00	7.00
Canadense Mixed. . . . .	.85	6.00
Carolinianum. The only fragrant native lily	2.50	16.00
Grayi. A small native lily; very dainty and rare. The bulbs are quite small each, 30 cents	3.00	
Philadelphicum. Orange-red, with black spots	1.00	7.00

We have the largest, finest and most comprehensive stock of Hardy Plants in America, including three hundred varieties of the choicest Pæonies, one hundred varieties of Japanese and European Tree Pæonies, including extra large specimens, and also the largest collection of Japanese Iris in the world and an unsurpassed collection of named Phloxes. Our illustrated catalogue describing these and hundreds of other Hardy Plants, Trees and Shrubs will be sent on request.

"A Plea for Hardy Plants," by J. Wilkinson Elliott, contains much information about Hardy Gardens, with plans for their arrangement. We have made arrangements with the publishers of this book to furnish it to customers at a very low price. Particulars on request.

New customers are requested to send references or remittances with their orders

ELLIOTT NURSERY COMPANY, - - PITTSBURG, PA.

The GARDEN MAGAZINE

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Why Fall Planting Pays

YOU avoid the spring rush—a big item—reason enough.

You gain a considerable time, in many cases.

You can select varieties more intelligently in fall than in spring.

You have a full stock to select from; less danger of "substitution."

You do a better job, because you have more time.

THE DISADVANTAGES OF SPRING PLANTING

The vegetable garden demands all one's leisure; trees and flowers are slighted.

Plants may come late from the nursery or suffer in transit.

Spring is always abnormal; either too wet or too dry.

Summer drought is a terror to spring planting, but not to fall planting.

AVOID RISK IN FALL PLANTING

Don't plant anything on cold, wet, heavy soil; drain it and lighten it first.

Don't plant peaches, apricots, plums, evergreens, or trees with "punk" roots. (See page 106.)

Avoid thin-barked trees, like birch, or wrap them with straw.

Mulch every tree for winter protection.

Insist on getting well-ripened stock.

Order early and plant early.

Ask your nurseryman if he will guarantee to replace dead trees.

THE JOYOUS SEASON OF BULBS

October is the time to plant every kind of "bulb, root and tuber."

To make formal flower beds.

To make new informal borders.

To start bulbs for the window garden, especially Roman hyacinths for Christmas.

To order hyacinth glasses. Have you ever grown hyacinths in water?

To get shallow bowls and pebbles for Chinese sacred lilies.

To put crocuses in the lawn where they will make a charming picture.

TRY SOMETHING NEW THIS YEAR

Why not naturalize a thousand poet's narcissus bulbs in some meadow, woods, orchard, shrubbery, or on the bank of a stream?

Have you ever tried giant snowdrops, snowflakes, or glory of the snow? Try them on the north side of a house where there is not enough light for ordinary flowers.

Are you acquainted with ixias for the winter window garden? Freesias? The Bermuda buttercup (*Oxalis lutea*)?

THE VEGETABLE GARDEN

Clean up and burn diseased plants, manure the garden, plow it and leave it all winter.

Burn asparagus tops and manure the bed. You can make new asparagus and rhubarb beds and plant sets of extra early pearl onions for use next March.

Put some parsley plants in a box and place it in a light cellar or in a shed.

Put some frozen rhubarb roots in a barrel of earth in the cellar where they will produce "pie-plant" for winter use.

Dig chickory for salad and store in sand in a dry cellar.

Blanch endive by tying lightly at the tips.

Bury a barrel of cabbage in a well-drained spot and cover with leaves. Or pile cabbages on the barn floor and cover with straw enough to prevent solid freezing.

Start a mild hotbed and have home-grown radishes and lettuce at Christmas.

THE SOUTHERN GARDENER'S REMINDER

In the latitude of Richmond, sow early cabbage, turnip for "salad," kale, spinach, lettuce and mustard.

Toward the end of the month set out cabbage and lettuce plants which are to stay outdoors all winter.

Start new beds of asparagus and rhubarb.

Set out strawberry plants.

Fall-sown grass seed generally makes a better lawn than spring-sown seed.

Plant spring-blooming bulbs.

Sow pansies in coldframes.

A NOVEL EXPERIMENT

If the witch hazel grows wild in your neighborhood, cut some flowering branches for indoor decoration. Last year's pods will open while you are not looking, and shoot their black seeds ten feet across your parlor, and you will hear strange noises in the night.

Fall Planting of Trees, Shrubs, Fruits and Vines

A FRANK DISCUSSION OF THE SUBJECT, TELLING WHAT IS SAFE, WHAT IS RISKY, AND HOW TO AVOID THE PITFALLS—WHAT FALL PLANTING GAINS—HOW TO PLANT A TREE

Photographs by HENRY TROTH, except No. 121 by H. E. PARTRIDGE, and No. 131 by ARTHUR HEWITT

I. Fall Planting in the North

By Henry Hicks, New York

THE argument for fall planting which is usually considered most important is that it does away with the spring rush. I believe the emphasis should be placed upon the fact that autumn is the time when a buyer can make the most intelligent selection. It is the time when we most realize the value of shade, the privacy of screen plantings, the beauty of



112. The marshmallow, the glory of August, one of the largest-flowered shrubs. Few people know that it will grow in any garden and can be planted in the fall. Every nurseryman has it. (*Hibiscus Moschentos*)

berried shrubs, and the few frost-resistant flowers. The principal reason for fall planting is that the opportunity exists; the needs are so great and the chances of failure so few that we should make the best of every opportunity. Early fall planting, in September and October, before the leaves are off the trees, may be a new idea to many people, but it is excellent practice, as the leaves have plenty of time to become established before winter sets in. If the wood is ripe, the foliage can be picked off several weeks before frost. Those who have hitherto preferred spring planting should make a trial of early fall planting. It offers advantages worthy of investigation. The best varieties of fruit trees can then be studied. You can then tell where to put things to the best advantage, because the best opportunity to carry in the mind's eye the effect of the proposed planting is when the trees and shrubs are in the leaf. The tree agent who calls in February is instructed to sell the fruit trees that grow most vigorously in the nursery, or which have the handsomest fruit, or the high-priced novelties, or the kinds of which the nurseryman has a surplus. He rarely has knowledge of the local adaptations of varieties, and unfortunately our horticultural literature has not reached the point of giving lists for each locality. However, most nurserymen, and your neighbors who have orchards, are willing to show them to visitors and to

give them the benefit of their observation of varieties. The same is even more true in regard to ornamental planting.

THE "POINTS" IN SELECTING TREES

Visit the nurseries in August, September and October, or earlier even, and, if possible, select the trees in person. In these months the merits and defects of various trees stand out most clearly. If they cannot endure the late summer drought then is the time that they show it. In the spring we are likely to select the tree that has grown the fastest and straightest. In September the biggest tree for the money (as Carolina poplar) may look the worst, because of its inability to stand the summer drought.

There are almost as many points in selecting good trees as in selecting animals. How-



113. The matrimony vine has long, slender, drooping wands loaded with scarlet berries sometimes almost an inch long. They make a fine contrast with the leaves, which remain green until they drop (*Lyctum Chinense*). Technically a shrub

ever, trees have the happy faculty of recovering from their defects. Be sure that trees have good roots and that the tops are straight and symmetrical. One expert tree buyer says: "Look first at the top of the leader and then right down the tree." The quality of a tree is not shown by any one set of measurements. Height alone is not a fair criterion of its value. The tree may be tall and very slender, but crooked, and likely to lop over. It may have a big diameter and still have poor roots and a crooked trunk. It pays to go to a nursery and get what you want, instead of buying latin names.

Almost anything can be planted in the fall,

provided the work be done early enough so that the plants can send out new roots before the ground freezes, and provided the ground be mulched to keep out frost during the winter. At this season, moreover, mulching is most readily at hand, the leaves from the forest and lawn being surplus products that are quickly available. A few branches of evergreens or other brush will keep the leaves from blowing away. There is no danger from drought in fall planting, as there is in spring. The great dangers are damp and cold. Drainage will insure you against the first; mulching against the second.

WHAT IS SAFE AND WHAT IS RISKY

Deciduous Trees.—Nearly all deciduous trees can be safely planted during the last half of October, November and the first half of December. There are two classes of exceptions.

1. The tulip tree, magnolia and sweet gum should not be planted in the fall, because the bark of the roots is of the "punk" type, i. e., very thick, soft and spongy. When trees of this kind are planted in the fall the roots are liable to decay. These trees should be planted just as the foliage is starting in the spring, when the ground is soft and warm and the broken and bruised roots can heal without delay.

2. Thin-barked trees, like birch and beech, are also too risky. The small twigs die at the tips, the roots being unable to send enough sap to take the place of that which is evaporated. However, many people have brought



114. The Japan pagoda tree, typical of many choice trees which we ought to know. It has conspicuous dark-green branches in winter and showy panicles of yellowish-white flowers from July to September (*Sophora Japonica*, var. *pendula*)

them successfully through the first winter by wrapping the bark with straw. Put rye straw an inch deep around them and wrap spirally with string.

Deciduous Shrubs.—Deciduous shrubs are safe to plant in the fall, and even in case they do winter kill, their quick recovery makes it of no importance. Such shrubs as althea, Japan Judas, *Forsythia viridissima* and California privet are liable to winter killing, especially if they make a soft, late growth, but that need not deter one from planting in the fall. Such winter killing is probably caused by a very sudden fall in temperature after a late, warm autumn, which has prevented the wood from ripening.

Evergreens.—Evergreen trees with a sufficient ball of earth can be planted in October and November if well mulched to keep out frost for a width of three feet outside the roots, and ten inches deep, but evergreens without a ball of earth should not be planted in October and November. August and September are excellent months for evergreens.

The broad-leaved evergreen shrubs, such as rhododendron, kalmia, *Azalea amena* and the *Leucothæ Catesbæi*, must have a big ball of earth or they cannot be planted safely in the autumn. However, some broad-leaved evergreens had better not be planted until spring. Naturally, holly that does not keep a ball of earth is best planted in the spring and should have all the leaves picked off.

Vines.—All vines may be planted in the fall. If they die back so much the better, as it is best for vines to start from the roots.

Fruits.—The stone fruits, such as plum and peach, are generally considered best planted in the spring, because if fall planted the small twigs dry out, but this rarely happens more than when the trees are properly pruned.

All the small fruits may be fall planted—currants, gooseberries, raspberries, blackberries and grapes. August planting of strawberries will give a good crop the following June. Strawberries can be planted in the fall, but will not yield a good crop until the second spring thereafter.

HOW TO PREPARE THE GROUND FOR PLANTING

Consider your soil and decide whether you will give it any preparation or not. If the soil is such that trees of the kind you want will grow vigorously in it, and reach old age without starvation, and will provide the required amount of moisture to avoid drought, no preparation is needed.

If, on the other hand, the soil is poor and dry, either naturally or as a result of grading, there are two ways of preparing it: first, by covering the soil with manure and fertilizer; and second, by carting away the present soil and bringing in new. Rarely, however, is carting soil necessary. The two or three cubic yards of good soil which are usually carted to replace bad soil are at best but a starter. A tree a foot in diameter spreads twenty-five feet or more; it costs too much to cart enough soil for such a tree. Where the top soil is only a foot or a foot and a half deep, and is underlaid by porous sand or gravel, it is best to put in a depth of two and



115. In the case of shrubs that bloom in early spring before the leaves, there is an extra reason for fall planting, since you may miss their color for a season if you plant in spring. Golden Bell or Forsythia, the best early-blooming, yellow-flowered shrub, should always have an evergreen background

a half feet of good soil, as it gives more moisture and food for the tree. If you can afford to do that for a diameter of six feet it is well but, of course, the tree as it reaches maturity

would like a wider supply. If the subsoil is hard pan or clay loam, perhaps the only preparation needed is to take it up and loosen it to a depth of two feet and a diameter of six feet.



116. The glorious Oregon or large-leaved maple (*Acer macrophylla*), with leaves often a foot across. Not hardy north of New York. A perfect specimen at Dosoris, Long Island, has windbreak protection

Probably 98 per cent. of our tree plantings get no better preparation nor carting of soil, and will do just as well as the trees in the woods or hedgerows if, like the trees in the woods and hedgerows, they are adapted to their conditions. And, in planting, the old rule of Olmstead and other landscape architects of "Plant native trees" or "American trees for America" is a safe one to follow.

But that rule can be carried even farther. Upland trees should be planted in the uplands and swamp trees in the swamps. It is in planting swamp trees in the uplands, and planting trees from an equable climate in a

When bringing in soil it is best to use top soil which has been proved good by the growth on it. Sometimes, however, you get top soil from a very moist place, and it may be very sandy and the luxuriance of growth due to abundant moisture. Often the whole region is sandy, and the top soil that is brought in is but very little better than the loam that is on the place. It has only been darkened a little by the decaying grasses, leaves and vegetable matter, and is an expensive luxury. There is one kind of soil to be avoided, and that is the black muck from the bottom of a pond, as it is sour. Until it has been exposed to

taken off close to the trunk, leaving only those which are to form the framework of the future tree. These branches should also be pruned, cutting them back perhaps half way or more to a bud or crotch of a small twig.

It is a mooted question whether the top or leader should be cut off. If the leader is cut off a tree forms later two leaders, which are apt to split the trunk and ruin the tree, as in the case of many maples. In Boston young elm trees are planted with a long, slender pole tied to each. As the tree grows this pole is moved up the trunk, and the tree kept to a single leader for sometimes thirty feet.



117. Fall is the time to make a grape arbor, and also the best time to plant grapes. Catawba is a good variety for arbors

variable climate, that the most serious errors are made. There are some trees, however, which thrive in both swamp and upland.

PLANTING ON SWAMP LAND

To avoid stagnant water and sour soil draining may be necessary. This should be attended to before planting, because sour soil will rot roots quickly. One way to plant on wet ground is to plant high, putting the tree above the surface and heaping the earth above its roots. Trees that have been blown over in swamps show that this is nature's method, the roots being only six inches deep.

frost or weathered a season, it is almost certain to be injurious to the roots.

PRUNING BEFORE PLANTING

First cut off smoothly the broken root ends which are over half an inch in diameter. Next trim the top if it cannot be easily reached from the ground after planting. A convenient way is to hold the tree away from you, or lay it over a box so that the top is in the air. With an oak or other hardwood tree, cut back severely, reducing the number of buds 60 per cent. to 80 per cent. Perhaps half or two-thirds of the branches can be

After the hole has been prepared it should be partially refilled so that the trees are at their natural level. Spread the roots out straight. It is most essential to work fine, mellow soil under the centre of the tree. In the case of fine roots, it may be necessary to do this with the fingers, putting down one layer of roots and covering them with soil, and then another. With coarse, fibrous roots the earth can be packed in with a pointed stick.

The next operation is to see that the tree stands vertically. The simplest way is to stand off, then hold up the shovel so that it

forms a plumb bob, and take a sight. Then stand around and look at the tree from a direction at right angles to the first line of sight, seeing that the trunk stands erect on both lines. Packing the earth firmly around the centre will hold it in position in most instances.

Next cover the side roots with the earth. The main idea is to get the earth in contact with all the roots, so that the moisture can be taken in immediately. After the roots are

II. Fall Planting on the Prairies

By F. D. Maynard (formerly of Nebraska)

THE fall season offers unusual advantages for planting all kinds of trees and shrubs, except evergreens, throughout the entire Western states. I have had unusual opportunities for observing the effect of fall planting in Illinois, Wisconsin, Nebraska, Minnesota, North and South Dakota and Utah. Although I have not been through

Throughout the entire Western territory, broadly speaking, planting is possible any time that the trees are out of leaf. The controlling conditions of the tree, the soil and the weather do not differ in their essentials from those which govern planting in the East, save that wind is the great enemy rather than intense winter cold. Some parts of the West are comparable to the territory of western New York and the New England states. Especially



118. Beeches planted in a circle for a children's playhouse. A clear proof that our forefathers had more imagination and sense than we

thus covered with fine earth rough sods and loam may be used.

Watering fall-planted trees is rarely necessary, as the ground will generally have sufficient moisture. Mulching with a coarse stable manure or forest leaves completes the operation.

Mice sometimes girdle young trees. For protection against mice, cover with wire netting, or make a mound of firm earth a foot high around the trunk, or cover the bark with some substance to repel the mice. However, most of these things are usually omitted, as the damage done is suffered by only a small percentage of the quantity of trees planted.

this region since 1902, I was actively engaged there in extensive fruit and ornamental planting for more than twenty years.

There was a time when we all thought that it would be the height of folly to plant anything in the fall, and in the pioneer days, on the wind-swept, treeless plains, it was certainly almost courting failure. In those parts of the country to-day, where there are few trees and no windbreaks, fall planting is still a risky proposition. Yet I do not say that it cannot be done. On the contrary, I would not hesitate to do my own planting in the fall, if I were thoroughly acquainted with the conditions.

is this true in some parts of Illinois and in Wisconsin.

THE GREAT PROBLEM OF THE WEST

The great problem that the planter has to contend with is how to keep a proper supply of moisture about the roots of the newly planted tree. Naturally, the tree that is dug up from the nursery, when it is put into its permanent position in the ground, has a smaller root system than it had where it was originally growing. It is not so well equipped to take up the moisture that is in the soil, and there is the added difficulty of a possible scarcity of moisture. The tree is to some



119. In the fall we ought to plant a few trees that have remarkable winter beauty, e. g., the oriental plane, which is covered with pendant button balls all winter. (*Platanus orientalis*)

extent handicapped. The wind storms of winter which sweep over the enormous stretches of flat, treeless plains, suck up such quantities of moisture from the soil that a tree not well established before the real winter sets in has a hard struggle. But if protected from the wind, fall planting in the West is robbed of its terror.

The moral is, plant windbreaks. Windbreaks are being planted to-day on the prairies, and are best made of the more resistant trees which can be put out with impunity at almost any time of the year.

In the lee of these windbreaks we plant as you do in the East, but outside of this protected area we do not plant big trees—the smaller the better, indeed. It is customary in making a planting list for this part of the country to reduce all sizes, as compared with the East, from two to three years. If you would buy a three or five-year-old tree in the East, you would purchase two or three-year-old trees in the West, because they would expose less surface to the wind. When windbreaks are more common we may be able to use bigger trees from the nursery.

THE BEST TREES FOR WINDBREAKS

A type of tree that can be planted through the West with the certainty of living, and which is being used largely for windbreaks on account of its rapid growth, is represented by the box elder, Russian mulberry, cottonwood, osage orange, honey locust and white ash. The only evergreen that it is safe to use for windbreak purposes is the white pine (*Pinus Strobus*), but, of course, it is not planted in the fall. Under no circumstances can we plant evergreens at this season. The struggle against the dry wind would be entirely too much for them.

THE KILLING HOT WINDS OF SUMMER

As compared with spring planting there is much to be said in favor of the fall. If we can get the trees in the ground during October and they will make growth early in the spring,

they are in a better condition to withstand the dryness of the occasional hot winds of July and August. Spring planting has always been attended with the risk of entire loss from these hot winds. The gardeners of the East can form no conception of the devastation caused in this way. I have had acres of thrifty young trees killed root and branch by these hot summer winds. I do not wish to have it inferred that these winds recur every year. Far from it! They are occasional, but, when they do come, Heaven help the man with newly planted, unestablished trees! The garden often suffers from the effects of these winds, which will literally burn up the flower garden in its fullest glory. Windbreaks or shelters of one sort or another are needed as much for protection against summer winds as winter winds. I can recall sitting on the piazza of a house in Wisconsin when one of these hot winds sprang up, and

seeing a bed of pansies on the unprotected side of the house literally burnt up in a few hours.

OCTOBER THE BEST MONTH

It has come to be customary to plant only during the month of October. As soon as November comes planting is attended with some risk, and by about the tenth of the month the limit of time is reached. In many cases nursery stock will not be received by the purchaser after the first of November, and the nurseries do not urge its delivery after that time. Again, this is all on account of the winds. There is no particular reason to fear for your trees during the first week of November, but some time during the month you are sure to have high winds. Mulching will extend the planting season. We do not mulch, as the Eastern gardeners do, to keep the ground frozen and to prevent the heaving of



120. All hardy vines can be planted in the fall, and, next to Japan ivy (*Ampelopsis Veitchii*), the best vine for crowded Northern cities is the wisteria, with its large grape-like clusters of purplish pea-shaped flowers. All it needs is a hole in the pavement, but it almost never flourishes in the City of New York



121. It is a mistake to cover a handsome house completely with vines. On this house the vines are cut back every year. They are Engelmann's ivy (*Ampelopsis quinquefolia*, var. *Engelmanni*), a form of Virginia creeper having disks like Japan ivy, which enable it to grow on stone or brick. It seems to be hardier than Japan ivy at Minneapolis. The leaves are smaller and denser than the common Virginia creeper and a prettier red in the fall

the soil and consequent tearing of the roots. We mulch in order to retain moisture. The prairie soil does not crack and heave. A summer mulch is often of more value than a winter mulch.

Dwellers on the prairie who live near a stream or lake have very favorable conditions for tree planting. With a large underground supply of moisture, the problem of winter drought is greatly lessened, and on the banks of big rivers they even plant in winter.

WHAT NOT TO PLANT

You can plant with impunity everything that might be planted in the East. Never, under any circumstances, plant evergreens or peaches in the fall. Plums adapted to the region can be safely planted in the autumn. Away from the sheltered situations it is not safe to plant roses, apricots, oaks or any of the nut trees. In the West the walnut is rarely ever planted. It is always grown from seed where it is to stand. Any kind of shrub that would not be spoiled by having its top cut can be planted in the fall. If during the winter it is partially killed above ground it counts very little, but do not plant "specimens." It is far better to grow them from small pieces.

FRUIT FOR THE HOME GARDEN

In fruit trees the Western gardener is more restricted than his Eastern brother. He must select varieties which will grow in his district. The Kieffer and Le Conte pears, for instance, hardy and rugged, can be planted

all over the West. They do not object to the extreme dryness of the winter. In some parts of this territory where soils of a clay nature abound tree planting exhibits especial difficulties. In some parts of Illinois, for instance, we find perhaps the worst region in the whole country for the tree planter, and it is possible to expect nothing like a reasonable success. Plant hardwood cherries, such as Duke and Morello. Possibly 80 per cent. of the cherry trees planted in the West are Early Richmond. The other or sweet cherries, being softer, suffer more from drought than the sour kinds and can only be planted in especially favored spots.

In gardens small fruits are planted exactly as in the East. You can put out potted strawberry plants in August and even October to get fruit next spring. The grape, the raspberry and blackberry are planted in October because, even if they are winter killed to the ground, there is no loss. In Illinois and Iowa particularly, but also in some other states, there is a depth of soil that would astonish the gardener of the East. In some places six feet is a common depth. With this great depth controlled, or rather protected from the winds, the Western gardener has a great opportunity for successful planting in the fall. It is merely a question of getting water at the roots in sufficient quantities to make up for any that is driven out from the top by the winds. In the milder climates, where the winds are not so severe, fall planting can be done with a certainty of success by watering abundantly at the time

of planting while the soil is being filled in around the ball, and in keeping up copious waterings after the frost closes down.

III. Fall Planting in the South

By J. M. Hunter

FROM every standpoint, the fall is the ideal planting time in the South. There, and only there, the weather conditions are such that you can with impunity carry on the work to advantage until a late date.

Though no longer a resident of the South, I have had an experience covering a wide range of country—from Florida (on the Indian River), with its oranges and pineapples, to Waynesville, in the mountains of North Carolina, where grow some of the finest apples, pears and plums to be had anywhere.

Trees and shrubs (evergreens and deciduous), and fruits and vegetables in an almost unlimited variety, passed through my hands during the years I was in the South, and from the results of planting at various seasons I cannot with honesty recommend any other time of the year to be so successful for enduring success there.

SUMMER HEAT THE SOUTH'S ENEMY

There is one great dominant reason for this—the plants are better able to withstand the summer's heat. The Southern summer is hot—very hot—and the Southern winter is mild, compared with the winters of the East. Though frosts come, they are not so very



122. A pin oak in late September; its ripened leaves may now be stripped. The fastest growing oak. About 12-ft. high, 2 1/4 in. in diam.; worth \$1.50



123. A white oak ready for fall planting. The upland type of roots as contrasted with the swamp type, of which the pin oak is an example



124. A Norway maple about 14-ft. high, 2 1/2 in. in diam.; worth \$1.50. Low-branched, symmetrical, stocky. A type of root system easily transplanted

severe, the temperature rarely going many degrees below the freezing point.

In a general way, the fall-planting season in the South is later than that of the North. The trees and shrubs make a later growth,



125. The wrong place to cut—between the buds. The twig will die and leave a stub. Reduce the top of a hardwood tree 60 to 80 per cent.

and it may be well into November sometimes before the condition of growth is such that the tree can safely be disturbed.

Planting in the South is generally done from November to March, the dormant

period of the trees, and my preference is for early planting. I had rather do the work in October, even, than wait until March. All the arguments for fall planting in the East hold good, too, in the South, with this one having still greater weight—by fall planting there is time for the trees to become established before the warmth of spring. Planting later than March is running unreasonable risk. Late planting means that the drying sun will beat down and rapidly dry out, not only the ground but the very moisture from the plant itself. In the fall the really hot sun only endures for a few hours. The evenings and nights are cool, and generally much dew falls. Later on, as the winter arrives, even should you have frost, it seems as if the moisture which had fallen merely arose and stood erect for the sun to drive it back again into the ground; the cycle to be repeated the next day.

I well remember, one November, planting some 200 street trees (maples), four inches in diameter, without a single loss—not even one questionable case—for all thrive abundantly.

Of course the planting must be done properly. The soil must be there; climate

will not do all. When you are going to plant, prepare the ground thoroughly. Don't make small holes, and then tread in the roots or merely push them under the soil. If your roots across the bole of the tree measure three



126. The branch on the man's left arm should be cut below his shoulder and the cluster of short twigs should be thinned out to two or three

feet, make a hole six feet wide and three feet deep.

Why plant in the fall? Because your trees are in position, ready to take up work in spring at the earliest possible moment; and



127. Let the tree stand as deep as it did before. Don't curl the roots



128. Use fine earth. Pack with a stick having a rounded, not square, end



129. Now put on the lumps and sod and firm them with the packing stick

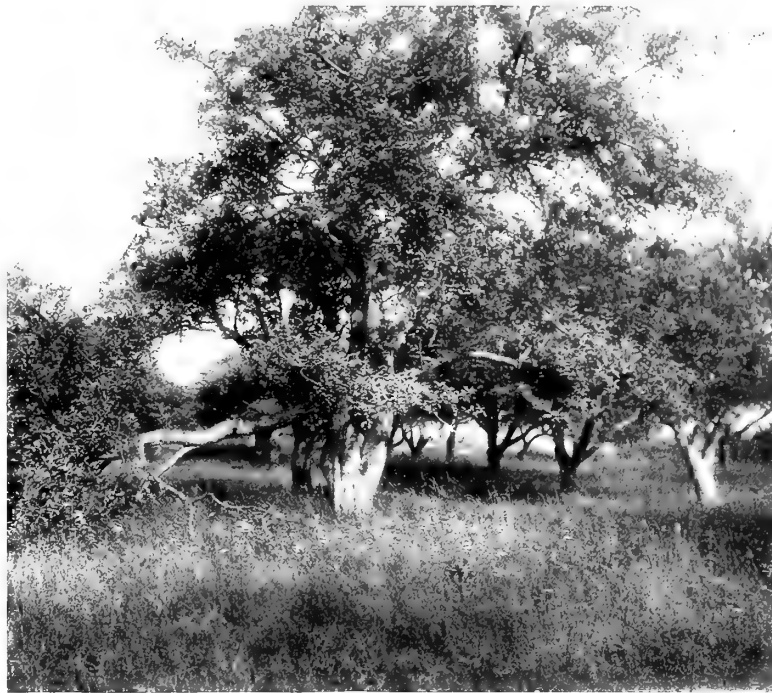


130. Now tramp and level. Allow three inches for settling. All done but mulching

every twenty-four hours in the spring is worth forty-eight in the fall, as far as the growth of a plant is concerned. Moreover, with the heaviest work done, should the weather be such as does sometimes occur—a very dry spring—spray and give water.

I well remember the first six acres of a lawn that I put down. The party who had farmed the ground for years previous, because I was plowing all through the winter, preparing to sow my seed, remarked that I would ruin it, and said that it wouldn't grow grass after such treatment. I astonished him by running a Northern lawn mower over the grass by June 11th.

The nurserymen begin shipping in November, and the season continues until February. After that time the weather begins to get hot, and there is risk of the roots drying out unless they are thoroughly protected. One must be extra



131. Why not have a small home orchard and long grass beneath the trees filled with narcissi or other flowers?

careful in the South to protect the roots—never leave them exposed. Keep them

ground for several days. Nut trees are best set out in late fall or winter.

covered with wet moss or straw or bur ap.

As soon as a package is received, it should be unpacked and both tops and roots thoroughly wetted. Then heel in and water once more. Sometimes delays in transit will hold the stock out of the ground until they are much dried out, and the younger shoots even shriveled. The remedy is to completely bury them, top, root and all, for two or three days. They will plump out, and may then be handled like other stock.

Even here, shipments will at times be caught by the frost, and the presence of any trace of ice in the packing material must be heeded by the planter. To at once set out trees from such a package would mean their certain loss. They must first be thawed out by burying the entire bundle, before unpacking, and leaving in the



Gathering apples. Any kind of fruit tree and berry bush can be planted in the fall, but the peach, apricot and plum are risky

Hardy Perennials for Fall Planting—By W. C. Egan Highland Park, Illinois

A CONSERVATIVE STATEMENT BY AN AMATEUR WHO HAS GROWN EVERYTHING OF IMPORTANCE ON A COLD, HEAVY SOIL IN A TRYING CLIMATE—FALL THE BEST TIME TO PREPARE THE SOIL—MINUTE DIRECTIONS FOR MAKING GOOD FLOWER BORDERS

Photographs by HENRY TROTH, except No. 136, by FLORA LEWIS MARBLE, and No. 137, by ALBERT MORGAN

I KNOW that great and increasing numbers of hardy perennials are sold by nursery-men every fall, and I believe that they give general satisfaction, provided they are planted in light, well-drained soil, in time to get established before winter, and covered with litter before the ground freezes. But, locally, I am something of a "bear," because the soil near Chicago is generally heavy, cold and wet, and the winters are severe. So, while I do not hesitate to move almost any plant in my own garden during the fall, should a neighbor come to me for advice as to the safest time to plant, I should answer: "Prepare the soil in the fall, but plant in the spring." This refers to the planting of a new border with a miscellaneous assortment of plants bought from a nursery.

"IRON-CLADS" AND TREACHEROUS KINDS

Some "iron-clads," as the Rudbeckia Golden Glow and the Rocket (*Hesperis matronalis*) may be planted almost any time, but my experience is that unless a very favorable winter succeeds many of the so-called hardy perennials planted in the fall will not be found alive in the spring. Gaillardias, double sunflowers (*Helianthus multiflora*, var. *plenus*) and the cardinal flower are among those most likely to be missed. Bee balm (*Monarda didyma*) is another that cannot be relied upon. The tall larkspurs (*Delphinium*

formosum varieties) stand fall planting, but do not do as well the following summer as when set out in spring.

The Oriental poppy, eremurus, Spanish and English iris, belong to a class that lose the foliage in the summer and are then at rest, the poppy reappearing in the fall and remaining green all winter. These and the many bulbous plants, such as the crocus, scilla, chionodoxa and narcissus, should be planted in the fall—and as early as possible.

MAKE YOUR BEDS IN THE FALL

In the fall the soil is comparatively dry and pulverizes in the digging, while in the spring it is wet from the melting snows, and the spade brings it up in compact "hunks," impossible to pulverize, and which remain thereafter solid brick-like lumps. This prevents a complete intermingling of any added manurial matter.

WHEN TO ENRICH THE BED

Native plants may be satisfied with such soil, but many exotics are to be brought to a new home and require different conditions. Native plants, when brought into well-made beds, surprise one with their thriftiness and increase in size of flowers. Plants in a bed are like prisoners in a besieged fort, and therefore should be well supplied with food. In our soil—as in most virgin soils—there is

plenty of inert food (unprepared food is perhaps a better description). The mineral elements present require the action of air and frost, and this can only be obtained by a thorough working of the soil and the addition of humus. The top eight or ten inches is generally in fair condition, as the frost and air have penetrated it and the decaying native grasses or fallen leaves have supplied the humus; but for better results, both in having



133. One of the stonecrops or sedums, a group of fleshy-leaved "live-forevers" with clusters of white, yellow or pinkish flowers, rarely blue or scarlet. A type of thing which anyone can grow



132. Japanese iris, with flowers six to ten inches across. Unrivaled for the margins of water-lily gardens and the banks of sunny streams. Irises should be planted in September or early October, or they may not get established in time to bloom next spring

a free run for the roots and for the retention of moisture during dry seasons, the soil should be trenched, or cultivated, eighteen inches or more deep. In England they think nothing of making a bed even four feet deep.

ADDING NEW RICH SOIL

If one does not mind the expense of bought soil, a good way to proceed is to remove the top soil to the depth of a foot and pile it at one side. The balance, to the depth decided upon—at least six inches—is dug out and carted away. With a pick or spade, loosen up the soil at the bottom, letting it remain, and cover it with six inches of fresh strawy manure. Then fill in, say, three inches of the top soil and tread it down well. Add manure and soil alternately until the pile is depleted. Then fill in with the new soil. That from a corn or potato field is suitable, especially if from some well-tilled farm where the weeds have been kept down. Make the bed some six inches higher than the surrounding surface, as it will settle during the winter.

THE ART OF "TRENCHING"

Where one does not bring in foreign soil, proceed as above with the first foot; then dig out the required depth at one end, about two



134. The wild bergamot (*Monarda fistulosa*) has varieties ranging from lilac and flesh color through rosy red and crimson to deep purple. The bee balm (*M. didyma*) is a more brilliant scarlet

feet wide, and place on one side. This is to give room for trenching. Loosen the soil at the bottom as before. Then put a layer of fresh manure about a foot wide in the bottom up against the end. Continue digging, shoveling the soil upon the manure, say six inches thick and at an angle of about 45°, with the base toward you and the apex within one foot of the original surface. The decaying manure will not only provide humus but will allow the admittance of the air. Continue with alternating layers. When the end is reached, the bottom soil, previously laid aside, may be used to fill in the open space. Then use well-rotted manure with the top soil, mixing it well and pulverizing the soil as it is thrown in. The bed will seem quite high, but will settle in time.



135. The German irises are better for the peoples' gardens than the Japanese, because they do not need an exceptional amount of water

If some portions of the soil are more clayey than others, it is advisable to add sand or sifted ashes where it seems most stiff and compact. In fact, sand may be freely added in any bed here. If the bed is large enough to admit it, ridging up the soil for the winter's frost action is advisable. All of this places the soil in suitable condition for the spring planting.

When planting time comes situations for any plant loving a sandy soil, such as Stokes's aster (*Stokesia cyanea*) or *Asclepias tuberosa*, may have more sand added. In wet, soggy land, all flower beds should be tile drained.

REVIVING WILTED PLANTS

When the plants are received, if the quantity is large unpack and "heel" them in some shady spot, watering them at the root and top, being careful to preserve the labels and not get them mixed. Plant at your leisure, watering when through, and if any plant seems to wilt, shade it with a shingle or place a box or flower pot over it for a few days. If they are dried out and wilted when received, immerse them for an hour or so in lukewarm water.

HINTS ON EFFECTIVE PLANTING

In the spring place your order early and plan for planting in masses. If the bed is small limit the number of varieties, and, if of a size equivalent to 10 by 5 feet or more, plant in groups of four or more of one variety to a group, and do not repeat the same plant in the same bed, or, in fact, in any other bed where both may be seen from the same point of view. This massing of plants instead of dotting them here and there prevents a spotty appearance. A full bed of one specimen is effective. The bee larkspur, phloxes, Coreopsis, German and Japanese iris look well in individual beds; but the beds must be of fairly large size and have some stretch of lawn leading up to them in order to be imposing.

Place your beds at the margins of your lawn, or along walks or roadways close to the house. Nearer the house they may be of set and formal outline, but along the lawn margins they should be irregular and undulating with bay and promontory. Do not let the curves be too narrow, as that will interfere with cutting the grass. A simple way to lay out these beds is to use a hose or rope, laying it on the ground and arranging it in the form that pleases you, and then marking the line by stakes or a spade. The sides bordering the fence or lot line may be straight, but if there is no dividing fence or hedge between you and a lovable neighbor curve the back also and give him the benefit of a pleasing outline. If you have open spaces of lawn between your beds, this scheme runs his lawn into yours and yours into his, extending the apparent size of each lot.

An open, sunny situation is the best, far away from the moisture and food-robbing roots of large trees, and it must be remembered that the feeding roots for trees often spread out as far as the branches extend, and in pyramidal forms much farther.

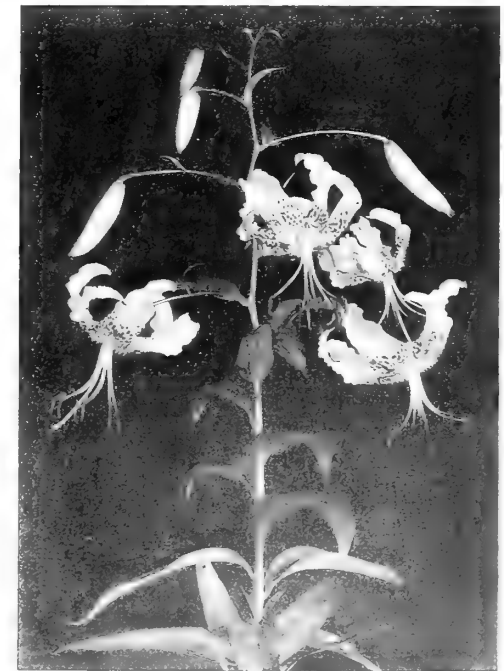


136. The best tall-growing, blue-flowered, hardy perennial is the larkspur. Flowers range from deep blue to white. Can be planted in the fall

PERENNIALS FOR SHADED BEDS

Columbines, foxgloves and the handsome meadow rue (*Thalictrum aquilegifolium*) will do well in shady situations not too much exposed to the drip of overhanging boughs. The same may be said of the hardy primroses.

Stake your tall plants. I have just returned from a neighbor's garden—one who has but lately tasted of the delights of a country life. He had never thought of staking. By midsummer his Golden Glow, Delphinium and other tall plants were mostly lying prostrate or standing at an intoxicated angle waiting for the next storm to send them to join their companions. He had cared for the plants for the past eleven months in order to enjoy their blooms for the remaining thirty days, but at the moment when results should be realized, a storm laid them low. A little money and time spent in staking them would have enabled them to fulfill his dreams and prevent disappointment.



137. *Lilium speciosum*, var. *rubrum*, a universal favorite. All lilies should be planted in the fall. By spring the fleshy bulbs have lost much of their strength and the roots are dried up

How to Raise Plants by the Hundred—By N. S. Green Ohio

IF you have a favorite flower, and want your friends to become acquainted with it, why not raise a big stock of it? It's easy enough. There are two methods which apply to nearly all the plants in your border: First, by cutting; second, by division. The latter is easy as a rule, and the wonder is that most people never think of breaking up their specimens. It is done in fall or spring.

Most perennials, when they become well established in good soil, spread in every direction from the parent plant, and gradually

form dense clumps of roots, which become so closely crowded that proper further growth is impossible. When much crowded, they make weak growths, with an excess of foliage and but few flower stalks.

All that is necessary is to break up the mass, dividing it into as many pieces as there are shoots or promises of top growth, if you want to get the greatest number of young plants. In any case, break up the dense mass. If you are not particularly anxious to get as many plants as possible, the old clumps can be chopped up with a spade, but a better and neater way is to separate the "crowns" by hand.

Some plants, like perennial phlox, can be divided at any time, but the two best seasons are early fall, when roots may be made again before winter, or early spring, just as soon as growth starts.

It is generally supposed that perennials die down each year and come up again the following spring, but this is true in but a few instances. The crowns of most kinds last for only two or three years, then die, and the plants that come up subsequently are offshoots of the old. Breaking these into single crowns is called dividing. Dig down beside a clump of plants—dahlia or phlox, for instance—and you will see that the larger roots are massed and entangled, and so densely packed that there is hardly any earth left among them. In order to keep them well supplied with food they must be given more room. With a sharp spade carefully lift the clumps, endeavoring as much as possible to prevent cutting or bruising the crowns. If there are broken or bruised roots, cut them off, as they are likely to decay and so ruin the entire plant. Let the holes be large enough to set the roots in naturally. When placed, press the soil compactly.

In thinning out a clump of plants, remove enough to leave eighteen to twenty-four inches between those remaining, so they will have plenty of room to expand. This is the quickest way of obtaining a number of flowering size plants of most perennials. Columbine, for instance, is so easily cross fertilized that in order to continue any variety division is essential. Divide the daisy after blooming, each crown making a plant. Hollyhocks, too, must be divided after blooming, so as to have one or more buds to each piece. The fleshy, tuber-like roots of dahlias are easily separated, one shoot being allowed to each. This can be done, if preferred, at planting time next spring.

The dwarf varieties of phlox are treated a little differently from others. In July shake soil among the clumps of growing plants, and by autumn the trailing branches will be found rooted at the joints. Cut them off, and you have as many plants as there are branches. Perennial phlox, Rudbeckia Golden Glow and feverfew should be divided every two years; daisy and spirea at three years, and peonies after four years. Remove the suckers of plume poppies every spring and divide occasionally.

The perennial phlox is one of the easiest of all plants to grow from cuttings, too. Take off any one of the small side shoots, flowering or not—it makes no difference—and cut out the top, also reducing the leaves; stick the end in the ground and it will grow. This can be done at any time before frost, in the open garden, but when frost is about due put the cutting in a sand bed, under cover, to keep out the frost.

In the springtime a large lot of young plants of the Michaelmas daisy (aster family) can be raised easily by cuttings, and—if it is desired to have late flowers—take cuttings in late spring or early summer.



138. Any side shoot on a flowering head of phlox will make a cutting. Use a sharp knife



139. To prepare the cutting, remove the two lower leaves and buds; cut off the stem just below the point; pick out the top and trim the leaves



140. Make a hole in the sand bed; insert the cutting, and water at once



141. To increase by division—one easy and sure way—dig up the plant when the foliage has ceased growing



142. Separate the crowns by pulling apart. Very large clumps can be chopped to pieces



143. Trim the broken and long roots, to induce fresh growth at once. Plant in good garden soil

Hardy Bulbs for Fall Planting—By W. N. Craig Massachusetts

HOW TO MAKE A BARE CITY YARD BLAZE WITH LIFE AND COLOR IN THE DREARY DAYS OF MARCH AND APRIL BEFORE THE TREES LEAF OUT AND THE WILD FLOWERS COME—THE CHEAPEST WAY TO MAKE A SPRING GARDEN—SIMPLE, EXPLICIT DIRECTIONS FOR BEGINNERS

With photographs and suggestions by LUKE F. DOOGUE and others

THE Dutch bulbs are generally ready to be distributed by the dealers about September 15th, and the early purchaser gets the best selections from the season's stock. You can plant bulbs any time from the beginning of October to the middle of November. In Maine, the earliest date is best; in Massachusetts and Connecticut, from October 10th to 15th is sufficiently early, and further South, the best time is correspondingly later.



144. The grape hyacinth, an old-time favorite. Small blue flowers in grape-like clusters. (*Muscari botryoides*)

As soon as the bulbs are received, remove them from the paper bags and spread them on shelves or in boxes, in a cool, dry room, until planting time. Don't put them in a damp cellar or keep them in a warm living room. Do not delay planting any longer than is necessary, for the bulbs lose much of their vitality when kept in boxes or bags.

The first work in preparing a bed for bulbs is to spade the earth deeply. When turning the earth, throw it up well into the centre of the bed, at the same time mixing in with it a good dressing of well-rotted manure which has been previously spread on the surface of the bed. This manure must be old, not fresh. Do the turning with a fork, rather than a spade, as the fork breaks up the soil much better. Plunge your fork or spade right down to the full depth and turn up the earth from the very bottom. After spading, rake down the earth from the centre to make the bed level. Don't leave any appreciable roundness, as that means irregular flowering, because of the different degrees of dryness.

In a formal flower bed it is essential that every bulb be placed exactly where it belongs. All distances must be accurately measured.

It is easy to make a little contrivance to facilitate this work. Take a piece of wood, about three feet in length and two inches in width, and drive nails into it at its narrow edge, placing them at six inches, or whatever distance you wish to plant your bulbs. Do not drive the nails home, merely fix them firmly, as they are to be used to score outlines over the surface of the bed. Attach a handle, and you have a "marker," which you can draw across the bed in both directions. Place the bulbs at the intersections of the lines.

First, place the bulbs that are to go in the centre of the bed, and, when one bulb has been handled, close that package before opening another. Nothing is more annoying in the springtime than to see a single spot of scarlet or yellow marring an otherwise perfect band of white.

If you want to make sure that all the bulbs are set at exactly the same depth, use a dibble. You can make one from a broken spade handle by cutting it off five inches from the bottom of the handle and sharpening the point. Or, cut a piece of any convenient stick of about an inch and a quarter diameter, and drive a nail into it at five inches from the end, which will mark the depth to which it is to be plunged. (In the spring, you can set out young lettuce or other plants much faster with a dibble than with a trowel). The only objection to it is that it sometimes compresses the soil too much, and it leaves a hollow space underneath a bulb, which ought to be filled with coarse sand before the bulb is set. Close contact with the soil is essential. The sand

provides drainage. Standing water at the base of a bulb makes the roots decay.

Speaking broadly, all the Dutch bulbs,



146. Snowdrops often flower in January or February. Get the giant type (*Galanthus Elwesii*)



145. The wrong way to plant crocuses in the lawn. They should be scattered, not put in lines. They will live several years in the grass if the foliage is not mown until it turns yellow, which is a sign that the bulbs are ripening. If the front lawn must be mown in early May the bulbs will be injured



147. One of the cheapest and easiest ways of filling a bit of woods with flowers is to plant the Star of Bethlehem. It grows in clumps about six inches high, with as many as twenty green and white flowers in a flattish cluster. The bulbs cost about \$6 a thousand, or you can find them running wild from an old garden

except daffodils, prefer a rather sandy soil. On cold, wet soils a coating of sand should be spaded into the bed.

DEPTHS AND DISTANCES

Plant hyacinths, tulips and daffodils five to six inches apart. The poet's narcissus and some others that have comparatively small bulbs, and also the irises, need only to be four inches apart. Snowdrops, crocuses, scillas and other small bulbs may be set two and one-half to three inches apart.

Hyacinths, tulips and daffodils of the ordinary kinds are covered four inches, but the narcissi with the largest bulbs (such as Emperor, Horsfieldii and Sir Watkin) thrive better when planted an inch deeper. Plant Spanish and English iris three inches deep. Crocus, snowdrop, chionodoxa, scilla, winter aconite and other small bulbs require two and one-half inches of soil over them.

After the ground is firmly frozen in early winter give the bulb bed a winter protection of leaves and straw manure or some other light material, which can be kept from blowing away by laying on it a few evergreen

boughs. This mulch is to prevent successive freezing and thawing, therefore do not place it on the beds before they are frozen. Moreover, if you do, field mice may nest there and eat the bulbs. If the bed is kept warm the bulbs make a premature growth, and many tops are broken when uncovering time comes. The protecting material should be removed in springtime, just as soon as the frost is out of the ground. Beds of bulbs in masses, which are left over from year to year, should have a coating of manure each fall.

TULIPS

Tulips are cheaper than hyacinths, last much longer in flower, and have more brilliant colors than any other bulbs. I think the single varieties are far superior to the doubles. A bed planted with one solid color is generally considered more effective than a mixed bed. If you have a circular bed and want a little more striking color effect, halve or quarter it with different varieties, but see that the colors do not clash. For instance, scarlet and pink do not harmonize; nor crimson and yellow. Mixed tulips of all shades sometimes make a

gay and pretty picture, but mixed hyacinths are an abomination.

Tulips are very effective in round clumps, near the edge of shrubberies or in sinuous bands of uneven width. If you have a hundred bulbs to plant, it is better to make two effective clumps, however, than ten small ones. Tulips are sometimes planted in grass, but they and hyacinths, however, are entirely out of place in such a location, being too stiff and heavy. For naturalizing, the wood tulip and wood hyacinth are appropriate (*Tulipa sylvestris* and *Scilla Hispanica*, known to the dealers as *Scilla campanulata*).

The following are a few of the very best varieties of bedding tulips (for colors see the bulb catalogues): Prince of Austria; White, Scarlet and Yellow Pottebakker; Joost van Vondel; Proserpine; Chrysolora; Cottage Maid; Keizerskroon; Ophir d'Or; Duchess of Parma and Wouverman. Yellow Prince, Prince of Austria and Duc de Berlin are deliciously fragrant. A few good doubles are: La Candeur, Murillo, Imperator rubrorum, Couronne d'Or, Tournesol.

If very early blooms are wanted, the dwarf

Duc van Tholl varieties, of various colors, can be used. They are less striking, however, than the others named.

Beside the regular bedding tulips, there is a later flowering section, in some respects superior. They come into bloom at a time when the wealth of commoner spring bulbs is past, some lasting until early June. They have long stems, are admirably adapted for cutting, and the bulbs keep from year to year better than those of the ordinary bedding sorts. These tulips are especially adapted for use in the front of shrubberies, or in clumps, in beds of hardy herbaceous plants. The following varieties can be relied upon to produce some of the most glorious flowers in the whole bulb family: Bouton d'Or, Gesneriana, Spathulata, Bizarres, Bybloems, Darwins (in many beautiful named kinds), Picotee and Golden Crown.

Among what are commonly termed the "species tulips," Didieri, Retroflexa and Vitellina are splendid. Greigi, with vermilion orange flowers with black centres and variegated foliage, is rather high priced, but a striking object. There are at least a dozen

other easily procured species that are worth the attention of the connoisseur.

DAFFODILS AND OTHER NARCISSI

The cultural instructions given by Mr. R. B. Whyte in "The Cyclopaedia of American Horticulture" can hardly be improved upon, and a condensed account of them is here given. Narcissi do well in any soil except the two extremes of sand and clay, but good drainage is essential. Prepare the ground thoroughly, for the bulbs are to remain undisturbed for five or six years, until the bulbs get so thick that they crowd up to the surface. Set the bulbs four to six inches apart and cover them four or five inches deep. Set those that increase slowly, like the trumpet daffodils, four inches apart. Leave six inches between the more vigorous species, such as *N. poeticus* and *incomparabilis*.

As soon as the surface of the soil is frozen, cover it four to six inches deep with strawy manure, and in the early spring rake this off before the shoots come up. When the flowers come, do not let any go to seed. Cut the stalks, not the leaves, or the bulbs cannot ripen well and the flowers next year will be

inferior. If you want the best cut flowers for indoor decoration, cut them as soon as the bud opens. The flower will last much longer than if exposed to the sun after opening. You can mail such buds to a friend and they will travel safer, and open perfectly.

The varieties every beginner should have (and they are the kinds that the "old-timers" do not want to live without) are mentioned on pages 125 and 126.

The true daffodils, or trumpet kinds, are the most beautiful of all the narcissi, but unfortunately, in this country they do not have the vigor or adaptability of the other groups of narcissus. Most of them die out after two or three years, but many of them are so cheap that anyone can afford to replant them.

If you own a bit of meadow, wood, the bank of a stream, or even a shrubbery, you can create a floral picture of surpassing loveliness by naturalizing the poet's narcissus. The bulbs cost from \$5 to \$10 a thousand, and are easily put in after a rain has softened the ground. There is a special tool for planting bulbs in the grass, or you can make one by sharpening a pipe of gaspipe to a cutting edge. Attach a handle to the piece



148. Tulips cannot be relied upon for a second year in formal beds, but after the first season they can be put in borders and will thrive indefinitely. See how they brighten up these evergreens before the latter have lost their heavy look



149. Count of Leicester, a typical "rose" tulip. The colors are white and pink

of pipe and you can take out a neat core of sod, which can be replaced afterward.

HYACINTHS

No very great art is required to grow bedding hyacinths. They will succeed in almost any well-drained soil, although, of course, they respond to an enriched soil. Cover the bulbs with four inches of soil. Sand above and below is very beneficial in the case of the hyacinth, as it is more susceptible to frost injury than the other fall-planted bulbs. Double varieties last longer than the single ones, but they have a heavy look and lack the distinctive form of the single type.



152. First, dig your bulb bed deep. Put stones or drainage material at the bottom if necessary. Use only well-decomposed manure

Bedding hyacinths are usually sold according to color (unnamed) in the leading shades, which are: white, blush, deep red, pink, dark blue, light blue, yellow. If you want the largest spikes of bloom, plant the blue varieties; the whites rank next in size, followed by pinks, reds and, lastly, the yellows, the spikes of which are much weaker than those of the other colors.

To secure absolutely true shades of color it is best to purchase some of the more inexpensive named sorts, such as Norma and Gertrude (pink); Robert Steiger (red); Gran-



150. How to have tulips by the armful. Plant them by a grape arbor in rich soil, where they can multiply undisturbed for years. Another way is to plant them under strawberries and lift both every three years. Tulips look well in mixtures

deur à Merveille (blush); Mme. Van de Hoop (pure white); Baron van Thuyll (dark blue); Queen of the Blues; and Leonidas (light blue); Ida (yellow).

Sometimes hyacinths and tulips are planted together in one bed, about half of each, for the purpose of making a succession, as the tulips do not come to flower until the hyacinths are past their best. I prefer, however,



153. Never use manure of any kind near the bulbs. Fermenting material destroys the young roots. Make soil light and mellow, then rake the top smooth.



151. Lac Sans Pareille, a typical "bybloem" tulip. Red striped with white

to plant them separately. The mixed colors are not pleasing, as the various shades of the two classes clash badly. Hyacinths will give the best results when grown in specially prepared beds, or in clumps, in mixed flower borders. Use one solid color in a bed, or shades that harmonize. Red, pink, blush and white go well together; but never combine blue and red shades.

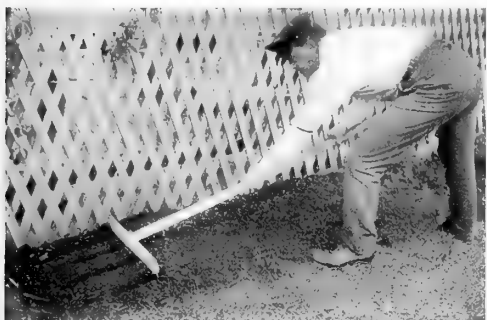
It hardly pays to keep hyacinth bulbs a second year. If they are carried over, much smaller spikes are to be expected.

THE EARLIEST FLOWERS OF ALL

Snowdrops are the very earliest of spring flowers. I have never seen them grow right



154. If you want a formal flower bed, the lines must be absolutely true. Here is a home-made marker made in a few minutes



155. The marker makes perfectly straight grooves, and each bulb is quickly placed in position

up through a snowbank, as some of our catalogue friends would lead one to think, but it is not uncommon to see them in blossom a few feet away from a vanishing heap of snow. You can count on them for March, and the crocuses for April. The snowdrop will often



156. Make a hole with a dibble. Put in a little coarse sand for the bulb to rest on

blossom on the north side of a house, or in a narrow passageway between two houses, where other flowers will not grow, but it is earlier and better on the sunny side. The giant snowdrop has much larger flowers than the common kind, without losing the delicate beauty of the little green and white flower so dear to every true garden lover.



157. The young roots and even the bulb itself, decay at the base unless there is proper drainage. Sand put in below and above the bulb insures safety

Crocuses in white, purple and yellow fill the season between snowdrops and narcissus, i. e., early April. A thousand bulbs will make a gorgeous display, and anyone can afford a thousand when they cost only \$3 or \$4. They make a charming effect when scattered in the lawn. You can avoid making a scar in the lawn by using a flat iron dibber. The bulbs will not last as long in the lawn as in a bed by themselves, but they should remain for three or four years, if you are willing to do a little dodging with the lawn mower in May. When the crocus leaves turn yellow, it is safe to run the mower over them.

THE LOVELY ENGLISH AND SPANISH IRISES

When planting bulbs in the fall do not neglect the Spanish and English irises. The former (*I. Xiphium*) will often start into growth during the fall they are planted and will endure all the winter, being but rarely injured by the cold. They thrive best in spots that are slightly moist, increase rapidly, and should be taken up and replanted every two or three years.

The English irises (*I. xiphioides*) succeed the Spanish irises, flowering in June and July, and are adapted to drier situations. Their foliage will not appear until next spring. The English irises have larger flowers than the Spanish, but are confined to white and purple colors. Excellent yellows are found among the Spanish.

Both must be planted in the fall, as they start growth very early in the spring. After planting, give a light covering with leaves and they will stand 30° below zero.

SOME CHARMING BLUE FLOWERS

Among the other bulbs that are worth planting at this time are the glory of the snow (*Chionodoxa Luciliae*), an early flower which comes before the blue squill (*Scilla Sibirica*). Both are desirable for planting for early bloom, in beds devoted to the larger and later-blooming bulbs, and are excellent, too, for wild planting, but should not be attempted in grass, as they are too small. Both of these bulbs give much better results in the second and third year after planting. The taller squills (*S. nutans* and *S. Hispanica*) will give good results in grass land, in the same situation as the daffodils, i. e., partially shaded.

The grape hyacinth (*Muscari botryoides*), of which there are both blue and white varieties, is a charming little thing for the immediate foreground of the flower border or scattered wild in thin, weak-growing grass.

WHITE AND YELLOW FLOWERS

The Star of Bethlehem (*Ornithogalum Arabicum*) and (*Allium Neapolitanum*) are useful for planting in masses where white flowers are wanted in the garden or in the border, and both prefer partial shade.

For early yellow flowers plant the winter aconite (*Eranthis hyemalis*), perhaps the earliest of all the bulbs to flower, coming into bloom long before the winter is past.

The old-fashioned crown imperial (*Fritillaria imperialis*), known to everybody but somehow not much planted (possibly because



158. The dibble, a wonderful time-saver. You can make holes and set plants with it much faster than with a trowel, but it "packs" too moist soils

of the disagreeable odor of the flowers), should also be set out in the fall. Do it as early as possible. Plant the bulbs as soon as you can get them. Growing from two to three feet high, this is a very effective plant for shrubberies, and its dark, orange-colored



159. Making a dibble from the handle of a broken old tool

flowers surmounted by a crown of green foliage give it a unique appearance.

And don't forget lilies—the most important of summer-blooming bulbs. Lilies must be planted in the fall. The spring isn't safe. Get a catalogue that offers a big list of lilies, if you want the best advice.



160. Another home-made dibble. It lacks a handle, and will be harder on the hands if you have much to do

Original Designs for Bulb Beds—By Jens Jensen Chicago, Illinois

WITH DIAGRAMS SHOWING JUST WHERE TO PLANT EVERY BULB, THE VARIETIES, COLOR, COST AND HOW TO FOLLOW THE BULBS WITH SUMMER AND AUTUMN FLOWERS

Planting diagrams by the author; photographs by HENRY TROTH

FLOWER beds serve two distinct purposes in relation to the home, and must be planned for accordingly. First, as a part of the general landscape; and second, as individual ornaments to be looked into at close range, not unlike the rug on the parlor floor.

WHERE TO PUT THE BEDS

In the one case, herbaceous or annual flowering plants are arranged in a naturalistic way, together with groups of trees and shrubs; in the second, they are planted in more or less formal designs. This type of bed is useful for filling out corners at the turn of a walk or drive, for bordering a straight path, or immediately adjoining the house. Where condi-



161. A circular bed of two colors composed of 117 white Alliance and 126 Belle tulips; also 135 pansy plants which should bloom all of May and June

tions are favorable, such beds may fill up and relieve an uninteresting space between a straight drive and a parallel path; or in a half circle directly in front of the *portecochère*, they add color to the architectural design. But it is a sad mistake to put a flower bed in the middle of a lawn. It interrupts the green and makes a place look smaller than it really is.

As to soil mixtures, the professionals differ among themselves, but it is very much like splitting hairs. For all general purposes, the amateur will find a medium black loam is



162. A circular tulip bed with a gay stripe of another color—just for a change. Bold, simple, dashing colors. The right sort of spring tonic

satisfactory to any kind of plant commonly used for bedding purposes. By a medium black loam is meant a black soil that will crumble away between the fingers when pressed together. The soil should be in a moderately damp condition when so tested.

BUY SOME GOOD RICH DIRT

As a general rule the good soil should never be less than twelve inches deep, and eighteen inches is nearer to the right figure. Increase this amount where the subsoil consists of sand or gravel. It always pays to have plenty of good soil because the investment in plants remains the same whether in good or poor soil, but the results are as different as night and day.

The price of good garden soil differs a great deal, and can perhaps best be judged by the distance it has to be transported. In our larger cities—here in the West—or their suburbs, the price for garden soil delivered in large quantities is seldom less than \$1 per cubic yard, and for smaller amounts from \$1.25 to \$1.50.

Dig over the beds to the full depth of the spade just previous to the planting, all roots and stones being carefully picked out, and the bed immediately raked smooth with an iron garden rake. A good tool for digging is the spading fork, and especially where the ground is more or less heavy. Periodically—every three or four years—the beds should be subsoiled in the fall and left alone until the next spring. By subsoiling, I mean to dig the ground two spades or more deep, throwing the top soil in the bottom and the bottom soil or last spading on top. The plant food so gained will amply pay for the extra labor.

BULBS YEARLY IN THE SAME BED

Even with the best kind of soil at disposal, a continued harvest of any kind will impoverish the land to such an extent that artificial fertilizing is necessary. Decayed stable manure or commercial fertilizers must be added to the flower bed every year. A good way is to use the stable product every third year and a quick-acting fertilizer the two intermediate years. The stable manure should be spaded into the ground, and must always be well rotted. The fertilizer should be raked in.

THE MOST FAVORABLE PLANTING DATE

In this latitude (Chicago) October 20th to November 1st is about right for bulb planting, perhaps a few days earlier for narcissus. These directions do not include all of the lilies, some of which have to be planted a great deal earlier—but lilies are not classed as spring bloomers. Information concerning them should be obtained from nurserymen or dealers who catalogue a long list of lilies.

Tulips, on account of their superior hardiness and showy colors, are used more than

any other bulbous plants in geometrical beds. To obtain the best effect they should be planted from five to six inches apart and three to four inches deep. Hyacinths and some of the larger narcissi demand a little more space, eight or nine inches being about the proper distance. It is very important



163. The great strength that comes from planting only one variety in a bed. It is a mistake to mix all sorts of hyacinths in the same bed

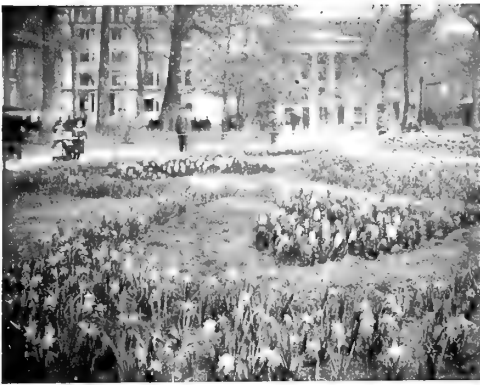
that tulips and hyacinths be set to an even depth; and be sure to get the top of the bulb toward the surface. Other fall-planted bulbs, such as scilla, chionodoxa, snowdrop, crocus and kindred small bulbs, where they are to be planted in masses and for the purpose of saving time, may be planted in drills made two inches deep. The bulbs are set two to three inches apart and the drills covered up with the back of an iron rake.

WINTER PROTECTION AND SPRING GROWTH

Most bulbs that are planted in the fall in this latitude need winter protection by straw litter, leaves or evergreen boughs. This should not be spread over the beds before the ground is frozen solid, and in an open winter leave it off entirely. If left on the beds too long in spring the plants will start to grow into the covering and make its removal diffi-



164. A long, narrow strip between a path and driveway or near the house can be made a blaze of color by filling it with tulips this fall



165. The complicated sort of design which one sees in the parks in big cities, and which is totally unfit for home grounds even when on a large scale. Contrast with the simple dignity and strength of 167

cult without injuring the plants. Watch the growth of the plants and gradually remove some of the cover so as to check the growth. There is much difference in the time of starting, according to the exposure, whether shaded from the sun or not. Variations are even seen in the two sides of a bed of convex form. Therefore make bulb beds as nearly level as possible.

If the fall is dry all the bulbs planted should receive a thorough watering. As a rule, it is impossible to leave bulbs in the beds after they have bloomed and until properly ripe, but some can be saved by taking up all the beds as soon as the bed is wanted for summer bedding and planting them in rows close together in a shaded hotbed or any other partially shaded place in light soil. They will ripen there, and some time in July or as soon as there is time may be cleaned, sorted, and put in trays on a shelf until the next fall-planting season. Only the larger bulbs should be planted again, purchasing others as may be necessary to fill the beds. The smaller bulbs may be planted in the mixed border.

THE SPRING BEDDING TIME

When to plant in the spring depends entirely on climate. In northern Illinois it is not safe to put out greenhouse stuff before May 20th, and such tender things as coleus and cannas not before the 1st of June. Pansies and daisies can usually be set out after April 5th, and in an early spring even sooner. Verbena, ten-week-stock and other half-hardy kinds may be safely planted the first



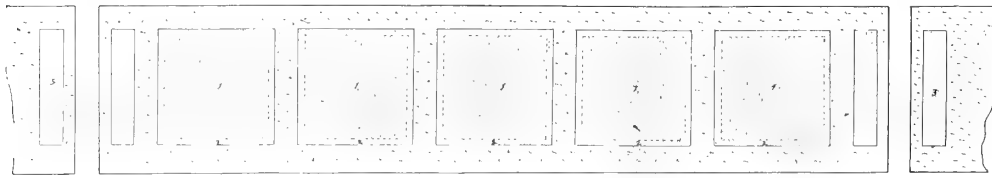
166. Hopelessly inartistic, but it gives the people what they want—a big, solid mass of radiant color. Tolerable in small parks in big cities, but not at home. Too many kinds, colors and seasons

week of May as a rule, earlier or later according to the season.

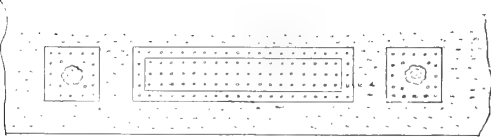
Allow six inches space for all the ordinary small plants such as pansies and daisies, and twelve inches for geraniums and other plants of equal size. Verbenas can safely be planted sixteen inches apart and salvia eighteen inches to two feet. Cannas should have a distance of two feet or more.



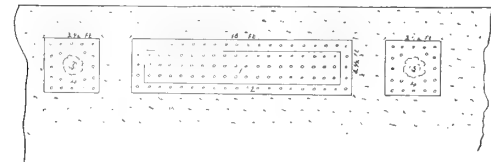
167. Formal bedding at its best on an estate near Philadelphia, showing beds of simple but original design and the strength and purity that comes from having only one color in a bed. How different from the intricate beds of the parks with their bewildering color mixtures



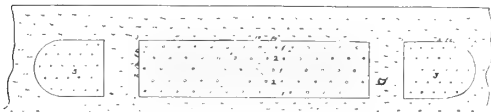
168. On a terrace where the beds are viewed from all sides, make them square, solid masses of bright color, edged by white. The narrow beds which mark the cross paths can be of different color. To fill these 2320 square feet with flowers all the season would cost \$275. Other schemes cheaper



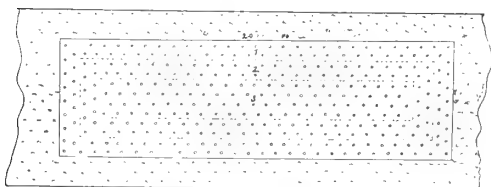
WALK.



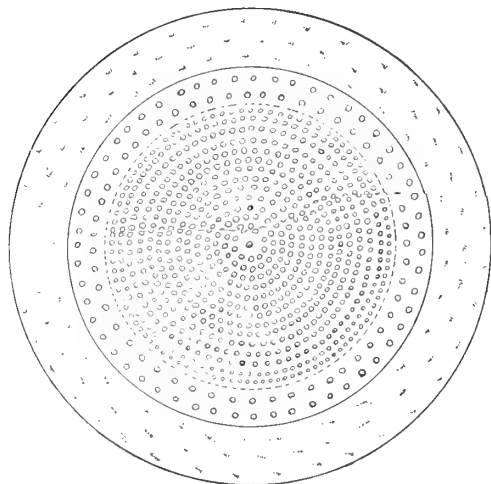
169. For bordering both sides of a walk or driveway, use long narrow beds relieved by smaller ones. Tulips, begonias, yuccas, pansies, and nierembergia



170. Beds for a small front yard are best long and narrow. Filled three times for \$15, using six different kinds of plants



171. A more pretentious effect for small gardens, but using only two varieties at each season. Hyacinths, alyssum and ageratum



172. The sort of thing for a public square. An edge of grass and a permanent border. Tulips replaced by cannas in the centre

What to Plant for Succession, and the Cost

168. Square beds 20 x 20 ft.; rectangular beds 4 x 20 ft.

Fall: 1. Tulip Proserpine (scarlet); 2. Tulip Pottebakker White; 3. Tulip Cottage Maid (pink); cost \$110.

Spring: 1. Geranium Mary Hill; 2. Double sweet alyssum; 3. *Nierembergia frutescens*; cost \$165.

169. Large beds 10 x 2 1/2 ft.; small beds 2 1/2 ft. square.

Fall: 1. Tulip Chrysolora (yellow); 2. Tulip Duc van Thol (white); cost \$2.

Spring: 1 and 2. *Begonia Erfordii*; 3. *Yucca gloriosa*; cost \$10. 4. Yellow pansies, cost \$4.

Summer: 4. Tall cup flower (*Nierembergia frutescens*); cost \$4.80.

170. Large bed 10 x 2 1/2 ft.; small beds 3 x 2 1/2 ft.

Fall: 1. Hyacinth Rubra Maxima (red); 2. Hyacinth Alba Superbissima (white); cost \$4.50.

Spring: 1. White ten-weeks' stock; 2. Red ten-weeks' stock; cost \$5.25. 3. Blue pansies.

Summer: 1. Dusty miller (*Centaurea Cineraria*); 2. *Celosia President Thiers*; 3. *Ageratum Stella Gurney*; cost \$5.25.

171. Dimensions 20 x 6 ft.

Fall: 1 and 3. Hyacinth Alba Superbissima (white); 2. Hyacinth Charles Dickens (pale blue); cost \$20.25.

Spring: 1. Variegated alyssum; 2 and 3. *Ageratum Stella Gurney*; cost \$9.50.

172. Diameter of circle 25 ft.; of flower bed 19 ft.

Fall: Tulip Artus (scarlet), Ribbon grass (*Phalaris arundinacea*, var. *variegata*), for border; cost \$7.50.

Spring: *Canna Leonard Vaughan*; cost \$3.50; *Phalaris* to remain.

173. Hollow section of a 10-ft. square.

Fall: Hyacinth Robert Steiger (dark red); cost \$5.75.

Spring: *Verbena Beauty of Oxford*; cost \$6.

174. One-quarter of a circle, 10-ft. radius.

Fall: Tulip Proserpine (scarlet); cost \$5.

Spring: *Geranium Mary Hill*; cost \$8.

175. Semicircle, 7 1/2-ft. radius.

Fall: Tulip Vermilion Brilliant; cost \$5.75.

Spring: *Canna Egandale*; red Chilean beets, for border; cost \$4.50.

176. Oval of 15 x 10 ft.

Fall: Tulip Rembrandt (scarlet); Tulip Pottebakker White, for border; cost \$6.

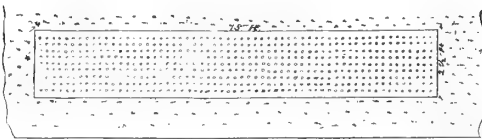
Spring: *Canna Chicago*; *Pennisetum villosum*, (*P. longistylum* of gardeners), for border; cost \$7.

177. Narrow border bed 15 x 2 1/2 ft.

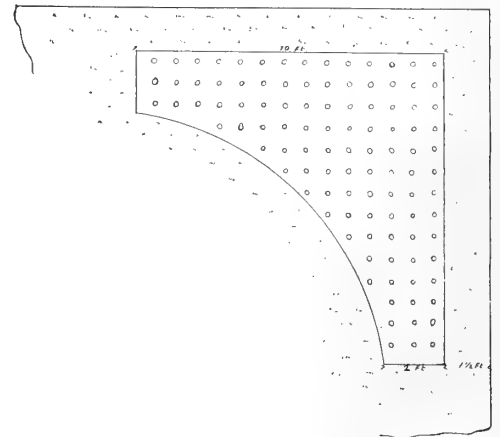
Fall: Blue and white crocuses; cost \$2.

Spring: Blue and white pansies; cost \$6.

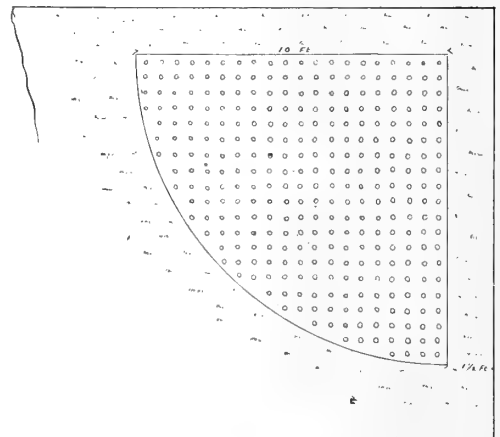
Summer: *Browallia grandiflora*; cost \$6.



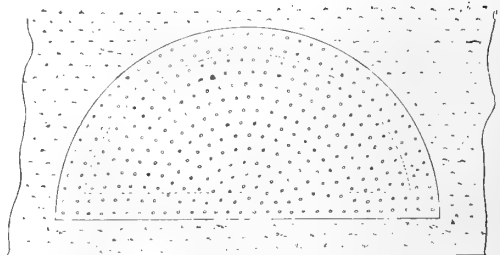
177. For the amateur who wants plenty of variety. Three changes in the year. Begin with crocuses; follow with pansies and browallias



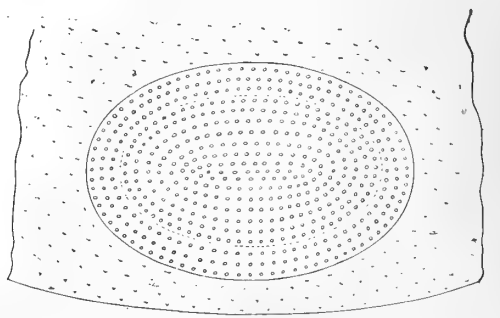
173. This sort of angle planting decreases the apparent distance. Suitable for very small gardens. Hyacinths and verbenas would cost \$11.75



174. For angles and corners where there is plenty of space use the quarter circle. Geraniums are put in after the tulip bulbs are removed



175. The half-circle is often most effective at the base of a portico. It gives support to the structure. Use bold foliage plants after the bulbs



176. An oval bed on a lawn is weak if the central mass of color is much broken up. Cannas and pennisetum after tulip bulbs are removed

Daffodils Everyone Should Know—By Thomas McAdam New Jersey

THE SIX SPECIES OF NARCISSUS THAT HAVE ALWAYS FASCINATED MANKIND—A FLOWER THAT WILL MAKE SPRING COME TWO WEEKS EARLIER—A BULB THAT GROWS IN A BOWL OF WATER AND BLOSSOMS IN FORTY DAYS

IT is a significant fact that the daffodil and narcissus seem to have forged ahead of the hyacinth in popularity, and now rank second only to the tulip among spring bulbs. It is easy to see why the tulip should be the favorite, because it has the largest flowers, the greatest range of colors and the most vivid hues. The hyacinth also has a wide range of colors and huge spikes of flowers. But the daffodil and narcissus are at the other extreme from these big, showy things; their beauty is of the diminutive, slender, delicate type. (Peter Barr says that some narcissi seem "fainting away, evaporating into air, as you look at them"; and that this "die-away languor is in consonance with the myth.") They have only two colors—white and yellow. Their variation in form can be comprehended in a moment. Yet there are hundreds of named varieties, and some of them, when new, have sold for \$125 a bulb! Moreover, it was Mohammed who said: "If I had but two loaves of bread in the world, I should sell one of them and buy narcissi to feed my soul."*

I think I know why this pale, modest flower goes straight to the hearts of men. It is a flower of the spirit, and you cannot resist the appeal of a brave spirit in a fragile form. Humanity's admiration of its hardihood in coming before the winter really leaves is expressed in these thrilling picture-words of Shakespeare:

*Can anyone give me the original form of this quotation?—T. McA.



178. Daffodils naturalized in the tall grass, where they will multiply without care indefinitely. In June the leaves of the daffodils are decaying while the bulbs are ripening, and the hay can be cut without damaging next year's crop of flowers. This enthusiast is said to have planted 250,000 daffodils

"Daffodils

That come before the swallow dares, and take
The winds of March with beauty."

All daffodils belong to the genus *Narcissus*. A daffodil is a flower that has a trumpet, like Fig. 182, and the typical variety is the yellow one that grows wild in England. The typical narcissus is the poet's narcissus (Fig. 180), a white flower with a small, saucer-shaped "crown" instead of a long trumpet. The distinguishing feature of the genus *Narcissus* is the presence of this crown, and the different species fall into three groups, according as the crown is shaped like a saucer, a cup or a trumpet.

There are six species that everyone ought to know, and the following "key" shows at a glance how each one differs from every other.

- A. Crown small, saucer shaped.
- B. Leaves flat.
- C. Flowers 1 or 2 on a stalk. POET'S NARCISSUS
- CC. Flowers 4-12 on a stalk. POLYANTHUS NARCISSUS
- BB. Leaves cylindrical, rush-like. JONQUIL
- AA. Crown medium sized, cup shaped. PEERLESS NARCISSUS
- AAA. Crown large, trumpet shaped. DAFFODIL
- B. Leaves flat.
- BB. Leaves cylindrical, rush-like. HOOP PETTICOAT

THE TRUE NARCISSUS

The flower which the Greeks named narcissus is supposed to be the one which the botanists call *Narcissus poeticus*. The old English name for the poet's narcissus is Pheasant's Eye, referring to the saucer of the flower, which is margined with orange-red. This species grows a foot and a half high

and usually bears only one flower on a stalk, but the variety *biflorus* and some others often have twin flowers. Three or four varieties of this species will maintain a constant succession from March until the end of May. The Pheasant's Eye, which is the cheapest, most productive and most fragrant, is also the latest, blooming the latter half of May. For the first half of May the variety *ornatus* is best. Though not so fragrant as the Pheas-

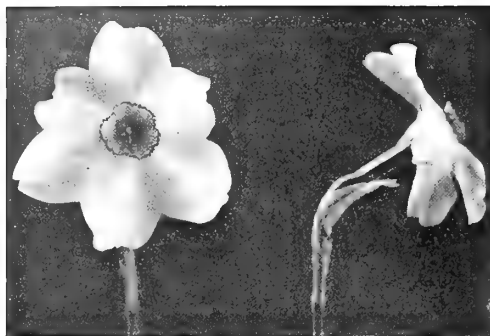


179. Every narrow little strip along a home path can be made radiant in spring by planting bulbs in the fall. Hyacinths and big, rich, yellow, double Van Sion daffodils

ant's Eye, it has a larger, more symmetrical flower, with an orange saucer. For March and April bloom, the star narcissi (*Narcissus Burbidgei*) are especially adapted. As long ago as 1884 there were fifty varieties of the Burbidge type, and all of them have a crown which is midway in length between a saucer and a cup.

The poet's narcissus is a flower with a mission. It was divinely appointed to fill the gap between winter and spring, before the trees show signs of life and while the landscape is bare and dead. It is the dreariest moment of the year, and if it were not for the gay little crocuses it would be intolerable. But the narcissus is the only flower that is strong enough to vanquish winter and enthrone the spring. We have it in our power to make spring come two weeks earlier, by planting narcissi by the thousand. It is perfectly practicable. The bulbs cost from \$5 to \$7 a thousand, and if rightly placed they will multiply indefinitely without care, though it is better to dig them up every five or six years, or whenever they show signs of too great competition.

There are five kinds of places where narcissi may be naturalized by the thousand—orchards, woods, shrubberies, meadows, and the banks of streams, lakes or ponds. In such places, the grass need not be cut until June, if at all, and by that time the leaves of the narcissus have decayed, showing that the bulbs are ripening. If the grass is cut before, the bulbs will be weakened. The cheapest



180. The saucer-shaped type, the poet's narcissus, the favorite for naturalizing. White, saucer saffron-colored, red-edged. Bulbs cost \$5 to \$10 a thousand

and best variety for naturalizing is the Pheasant's Eye. Indeed it is the most important plant for wild gardening now generally available. Some of the most splendid floral pictures that have been painted in America in the last ten years have been made by planting these bulbs by the thousand. I expect to see the day when people will make pilgrimages to New England to see the March and April flower shows. Her gaunt old hillsides will be suddenly transfigured by the apparition of countless fragrant white flowers—miles and miles of them—like the stars of the Milky Way for multitude!

The other flat-leaved narcissus with a saucer-shaped crown is the polyanthus narcissus (*N. Tazetta*), but instead of having a single flower on a stalk it has four to twelve,



182. The trumpet type. This is what most people mean by "daffodil," and by narcissus, a flower with a saucer-shaped crown, like that in Fig. 179

whence it is often called the bunch-flowered narcissus. It has no hardy form of importance, its main interest being in two varieties that are universal favorites for window gardens. The Paper White narcissus is doubtless the most popular bulb that is forced for Christmas flowers. And the Chinese sacred lily (*N. Tazetta*, var. *orientalis*) will make a growth of twenty inches in forty days and flower in four to six weeks, after being planted in a shallow bowl of water.

THE JONQUIL AND PEERLESS NARCISSUS

Unlike the other saucer-crowned narcissi, the jonquil (*N. Jonquilla*), has rush-like or cylindrical leaves—not flat ones. It bears four to six yellow flowers. The single form is the best for outdoor planting.

Of the cup-shaped or medium-crowned narcissi (Fig. 181), the "peerless narcissus" (*N. incomparabilis*) is the most important type, in spite of its lack of fragrance. It has an incredible number of varieties, and they bloom from March to May. Sir Watkin, a large golden flower with a darker crown, is the favorite.

THE TRUE DAFFODILS

The daffodil (*N. Pseudo-narcissus*) is a flat-leaved plant with a trumpet-shaped flower, like Fig. 182. By common consent the single, yellow daffodil is the most beautiful member of the genus. This is the flower Wordsworth referred to when he wrote:

"Ten thousand saw I at a glance,
Tossing their heads in sprightly dance."

But alas! such pictures are not often to be duplicated in America. The cool, moist summers of England are just right for daffodils, but we cannot yet recommend them for naturalizing in this country.

Like all the other important types, the varieties of daffodil can be thrown into three groups, whites, yellows and "bicolors," the last having a golden trumpet, with white or primrose-colored petals. The whites are not quite hardy, but some of them are cheap enough to try. Of the yellows, Emperor is probably the best hardy variety. Of the bicolors, the favorite white-petaled varieties are Empress and Horsfieldii; white Princeps is the best with primrose-colored petals.

Double daffodils grow wild in great numbers near Florence, where the single form is rare (the case is just reversed in England). The common variety of old-fashioned gardens is the Van Sion, which is also the best for forcing and for the window garden. It is not quite hardy in Canada, and from Virginia south the flowers are likely to turn green after a year or so in the garden. Many flowers are ruined by doubling, but the Van Sion daffodil is a complete success. It is the strongest member of the genus in every way. Its luxuriant foliage, sturdy stems and big, full flowers (of a rich, strong, hearty, golden color) light up a room in the dark days of March like nothing else that grows.

The shape of the hoop-petticoat daffodil (*N. Bulbocodium*) may be imagined from the name. It also differs from the common daffodil in having rush-like leaves. It has plenty of varieties, but nobody in this country seems to be much excited about them. I



181. The cup-shaped type. Stella, a new variety of the incomparabilis section, with long white petals and primrose cup. True type at the left

suspect that we do not consider their trumpets as graceful as those of the common daffodil.

AN INTERESTING NOVELTY

Every year a man should try some new kinds of narcissus. This fall I shall put what money I can spare into bulbs of Poetaz Elvira, said to be the product of a cross between the poet's and the polyanthus narcissus or Chinese sacred lily. They claim to have secured the hardiness and large-sized, red-rimmed flower of the poet's narcissus, while the other parent contributes a cluster of three or four flowers and a colored saucer. Also the odor is not so strong as in the Chinese sacred lily. It sounds too good to be true.

For the culture of daffodils and narcissi see page 119.



183. Van Sion, the only big double daffodil that will force; the others "come green." Sturdy stems, lush foliage and rich golden flowers



184. THE POET'S NARCISSUS NATURALIZED BY THE THOUSAND AT PROFESSOR C. S. SARGENT'S HOME IN BROOKLINE, MASS.



185. Dwarf trees usually bear higher quality fruit than standard trees, are easier to spray and pick from, but need so much attention that it is not best to plant them unless crowded for room



186. The fruit cannot be reached, even on tip-toe. At harvesting time one is apt to regret having headed trees very high. These trees might with advantage have been headed three feet lower

The Home Storage of Fruits—By S. W. Fletcher Mich. Agric. College

PICKING AND HANDLING, A SUBJECT WHICH EVERYONE WHO GROWS FRUIT SHOULD KNOW ABOUT—HOW TO INSURE PLENTY OF FRESH, SOUND FRUIT AND PRESERVE IT ALL WINTER AND SPRING

Photographs by the author and from the Horticultural Department of Cornell University

MANY people lose a large part of the product of the home orchard because they do not pick and store the fruit properly. Only last winter I saw a man throwing apples into his cellar with a coal shovel. He had

more careful with their fruit than amateurs, because the returns from a single shipment of bruised fruit are a convincing argument against carelessness. It is a shame for a man to raise good fruit only to lose, because of improper handling, a part of what it might be worth to him.

not always of as high quality when they reach us as our own tree-ripened fruit. Usually the home orchardist will let his fruit ripen on the trees, except, of course, winter varieties of apples and pears. In some cases early picking may be advantageous, especially for the purpose of prolonging the season of a certain variety or saving it from bird or insect enemies, even though it may be at the expense of quality.



187. To test ripening of pears, grasp the fruit like this and bend up. If the stem snaps off easily and smoothly where it joins the spur, the fruit may be picked even though not at all soft

shaken off all that could not be picked easily from the ground, dumped them into a springless farm wagon and jolted them across a rocky pasture to the house cellar, there to be shoveled out like so many potatoes. I asked the man if he did not think it would pay him to give his fruit a little better care. "What's the use?" he replied. "My fruit does not keep well any way. It's all gone by Christmas. I lay it to the poor soil on which it is grown." I did not tell him what I laid it to.

Most people have more respect for the tenderness of fruit; but there is still a woeful lack of appreciation of the extreme susceptibility of fruit to injury from careless handling. Commercial growers, as a rule, are

TIME OF PICKING AFFECTS QUALITY

The time of picking makes a great difference in the quality and the keeping of fruits. The various kinds, and sometimes different varieties of the same kind, require different treatment in this respect. Experience is the best guide, because the ripening changes of fruit vary with soil, climate, variety, season and a dozen other factors.

In general, the greener the fruit when picked the longer it will keep, and also the poorer it will be in quality. All our common orchard fruits, with the exception of most varieties of pears, reach their highest quality only when they are allowed to ripen in the natural way—on the trees. The sooner they are picked before this time the more likely they are to be sour, astringent, dry, stringy, mealy, insipid, and everything else that is inexcusable in a dessert fruit. The home fruit grower can let his fruit ripen on the trees, and secure all the high colors, flavors and aromas that develop during the final stages of ripening. He gets infinitely more satisfaction from his fruit than those who are forced to buy in the general market fruit that was taken from the tree while yet more or less immature, and before the exquisite flavor of a fresh, tree-ripened fruit have developed. The peaches, pears, plums and apricots that come to Eastern markets from the Pacific coast are often picked two weeks before they would be mature if allowed to remain on the trees. No wonder they are

THE CRITICAL TIME TO GATHER

Apples.—Some summer and fall varieties of apples ripen well on the trees, but most of them should be picked when they are well colored and have reached full size, but are not yet soft; i. e., they may be mature but not ripe. Summer apples especially are likely to water-core or rot if not picked before fully ripe. In the neighborhood of Boston, growers of Williams, a summer variety unex-



188. A peach may be picked when it feels springy or at all soft. The best quality fruits, however, are those that fully mature on the tree



189. Pick plums by their stems so as not to rub off the waxy bloom, which keeps the juice from escaping. Leave the stems on; the fruit will keep better

celled for home use, spread a straw mulch beneath the tree and allow the apples to ripen on the trees and drop upon it. The time of picking winter apples varies considerably. If it is desired to keep them very late, they may be picked a little green, but usually it is best not to harvest them until mature—well colored, of full size, and usually with brown seeds, although the color of the seeds is not always a reliable guide to maturity. Some winter varieties, such as Spy, are often allowed to hang upon the trees for a few weeks after the first frost. From the home orchardist's point of view—that of good eating—the chief desideratum is complete maturity, which brings quality; and the signs of maturity are readily distinguished by an observing man.

Pears.—Most varieties of pears should be picked when mature, but not ripe, and ripened in a cool, dark place. This applies with especial force to the early sorts, as Summer Doyenne, which are likely to be dry and stringy if tree ripened; and most of all to



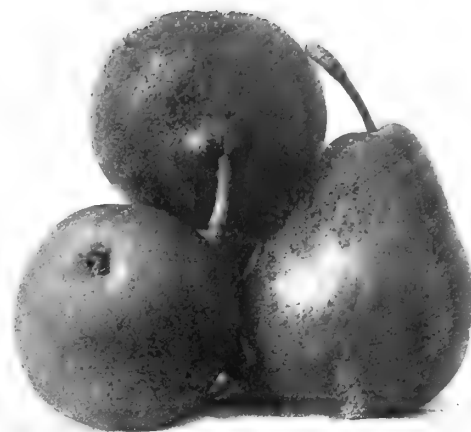
190. Picking into a padded basket. Fruit should be handled like eggs. A bruise becomes a rotten place

Clapps, which, nine times out of ten, will rot at the core if left to ripen on the tree. In addition to the usual signs of approaching maturity—heightening color, full size, and darkening seeds—the snapping of the fruit stem from the spur is an especially reliable guide. Experienced growers take the fruit in the hollow of the hand and bend it straight upward from the spur. If the stem snaps off easily and smoothly at its attachment to the spur, the fruit is mature and the whole crop may be picked with safety, though none of the fruits may be at all soft. If, however, the stem breaks off below its attachment to the spur, the fruit is probably not yet ready for the basket.

Plums are more commonly picked when nearly or quite ready for eating than any other orchard fruit; but, if necessary, as in commercial growing, they may be picked some time before ripe. The Japanese varieties, as Abundance and Red June, can be gathered when quite green, and will color and ripen well if stored properly. The common varieties of the European class, as Bradshaw and Lombard, may be picked while still hard; but when grown for home use plums should always be allowed to hang on the tree as long as possible. If there is difficulty with rot, the fruit may be gathered early to save it, although the rot is often quite as serious in the storage room as on the trees. Certain varieties of native plums, as Wildgoose, are likely to burst open some seasons if allowed to ripen on the tree and drop to the ground in their natural way. Early harvesting remedies this trouble. With these exceptions the home grower should let his plums hang till their delicate aroma and juicy plumpness assure him that they are ready to grace the centre of his table.

Cherries are usually picked when they are ready to be eaten. For marketing they are commonly picked just before they ripen. If there is difficulty with birds, boys or rot, it will pay the home grower also to pick his cherries before they are fully ripe. This is the only way to handle rot if it starts at that time. Many a man has had a crop of cherries rot in one night, just when the fruit was ready to be eaten. In wet seasons especially one must forestall this disease by early picking, as spraying does not usually control it. For the birds, plant a tree or two of mulberries near the cherries; the fruit ripens about the same time, and birds prefer the mulberries. I have no advice to offer on handling the boys, except to give them a pocketful occasionally. Coals of fire are better than sticks, or shotguns loaded with salt, for most boys.

Peaches and apricots should be picked when fully ripe, for the best quality; but, if necessary, as soon as they show the first signs of ripening. If the fruit is of good size and well colored it may be tested for maturity by pressing it gently with the ball of the thumb. If it feels springy, or gives at all, it may be picked safely and ripened in storage, though these fruits cannot be expected to have quite the sweetness and aroma of tree-ripened fruit. The earliest varieties, as Amsden and Alexander, which are more liable to rot than



191. The kind of pears that keep—well grown, free from disease and carefully picked. This is a superb variety—Patrick Barry. It keeps all winter

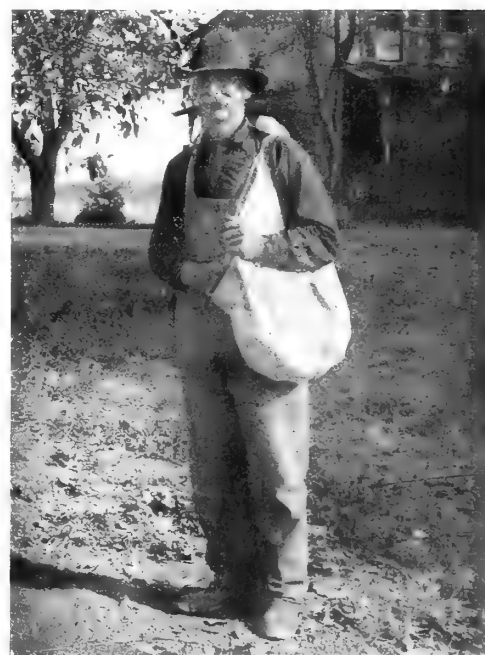
later sorts, may often be saved to some extent by early picking.

THE WAY TO RUIN GOOD FRUIT

Care in picking is not an unimportant point. One can pick fruit either carefully or carelessly—handle it like eggs or like potatoes. The delicate and perishable nature of fruit ought to be apparent to everybody; yet I have seen, I suppose, more than a hundred different men shake off, or knock off, with poles, apples and pears that they expected to put in the cellar. Every jam, knock, jolt, fall, rub, that injures the skin or bruises any of the pulp, usually becomes a rotten place sooner or later.

I used to work for an old farmer who preferred "specked" apples to any other. In fact, he would not eat any that were not specked; he said the pulp was of better quality next to the speck. Most of us, however, have not such a refined taste; we like sound fruit.

The only way to have sound fruit is to pick it and handle it with care. No shaking



192. A meal sack is a good receptacle for apples or pears; does not bruise the fruit, is easily emptied



193. Why some folk's apples do not keep well. They are thumped around like potatoes. Never pour apples into a barrel—slide them in

can be allowed, except of fruit that cannot be reached even by the most agile boy. No knocking fruit off with poles. These may do when the fruit is wanted for drying or for cider—though I doubt it—but never when it is destined for the table. Hand picking, and the most scrupulously careful hand picking, must be insisted on in the home orchard. The various picking devices, designed to break or twist off fruit into wire fingers or pass it down through canvas bags, are all impracticable on any large scale. They take too much time. Stick to hand picking, if your trees are so shaped as to admit of it.

It makes a difference how the fruit is separated from the branch. An apple should be separated by slightly twisting the fruit and bending it upward. If it is pulled off, the stem is likely to be broken or pulled out; in either case, the fruit is not likely to keep as well as fruit with stems on; neither does it look as well. Pears are picked in the same way, and always with stems on. In gathering plums and cherries, do not grasp the fruit itself, but the stem, which should always be left on unbroken. The bloom of plums should be preserved, not only because it adds to the attractiveness of the fruit, but also because it prevents the evaporation of the fruit juices. Peaches and apricots are pulled off with a slight twist.

CONVENIENCES FOR GATHERING

This is an important problem to the commercial grower, but the man who grows a small amount of fruit for home use is not troubled by it; he uses whatever ladders, baskets, etc., are handy. For peaches, apricots, plums and pears and Morello cherries, there is nothing better than a ten-foot step-ladder. Get one having a one-legged brace; on sloping ground it stands up better than one with two legs. For apples and sweet cherries and other tall trees, light rung ladders are best. If the ladder is brought into a point at the

top, like an inverted V, it can be pushed more easily between the branches. A cheap and effective picking ladder can be made at home by nailing rungs on a stout pole of the right length. Climbing around the trees should be avoided as much as possible. There is almost sure to be more or less abrasion of the bark by boots, and these places make ugly wounds.

For a picking receptacle, any box or basket will do if the fruit is handled carefully enough. A half-bushel splint basket which has been padded with burlaps and provided with an S wire hook is excellent for apples. A still better arrangement, in the opinion of many, is a grain sack slung over the shoulders, with one corner of the mouth caught to one corner of the bottom. If the mouth is held open with a hoop the bag can be filled more easily. Excepting the sack, whatever is used to pick into should be padded. In emptying baskets or sacks do not pour the fruit out roughly. With one hand keep the rolling fruit from bruising and gently slide it into the receptacle. If fruit has to be carried any distance on a



194. Apples harvested by the worms of the codlin moth; the grower will have to buy apples in the fall. Harvest time teaches many lessons

wagon, by all means let it be a spring wagon if possible. These little points mean much in the keeping of fruit, especially apples and pears that are to be stored for winter use.

THE KIND OF FRUIT TO STORE

Amateur fruit growers do not make as much use of winter fruit as they should, especially of fall and winter pears. Almost everybody who has a fruit garden puts a few barrels of apples into the cellar, but apparently very few people know how easy it is to have a supply of Anjou, Lawrence, Josephine, Barry, Nelis and other delicious pears from October to April. The pleasures of the fruit garden should not be confined to the summer season; they may be extended throughout the entire year.

The first essential to this is a wise choice of varieties—select varieties that will ripen in succession and will give fruit to eat every month of the year. This subject was discussed in *THE GARDEN MAGAZINE* for May.

The next essential is good fruit to store. Wormy, scabby and bruised fruit, and wind-falls seldom keep well.

Many people try keeping fruit in their cellar and give it up, blaming the cellar because the fruit keeps poorly. The blame usually lies with them, because they tried to store inferior fruit. Fruit for the storage cellar should be well grown; undersized, knurly fruit does not pay for its keep. It should be well colored and mature. When frost has begun to thin the foliage a little, and the poorer specimens are beginning to drop, the grower should begin to pick his winter fruit. It should be unblemished by worms and scabs, although I do not know that this is more important with winter fruit than with summer fruit; worms and scabs are unsightly and disagreeable at all times. It should be sound, free from any bruise whatever. No windfall can be a first-class fruit. It may *seem* to be uninjured, but in storage the place where it struck the ground will decay. No fruit that is beaten or shaken off should go into the cellar. If any but perfectly sound, fair, mature fruit is stored the result is likely to be disappointing.

HANDLING FRUIT FOR STORAGE

Many people still believe that winter apples should be piled upon the ground in the orchard and allowed to sweat for a few days before being put into the cellar. This is not necessary, although it is often a convenience to the commercial grower who packs in the orchard. The piles are liable to develop heat and decay. If possible, handle but once fruit that is to be stored; that is, pick it into the boxes or barrels that will be put into the cellar. This requires that the fruit be graded when picked. This method is more practical, as a rule, for fall and winter pears than for apples. Many barrel



195. Bartletts ripening in the hay-mow—the way we used to do it when we were boys. (Not always, however, were the fruits from the home orchard)



196. Careless handling shortens the life of fruit. The bruised fruit on the left will soon be as rotten as the one next to it. The apple on the right has been handled carefully and will keep well



197. Wormy, scabby, bruised fruit, that some people put into their cellars and kick if it does not keep. Store only sound specimens, as decay is not prevented by storage; it goes on slowly



198. Scabbed pears not worth picking. Neglect of spraying, tillage or other necessary care shows in the fruit. Make better plans now for next year. What shall the harvest be?

their fruit before storing; others find it best to store the fruit in bulk, and still others prefer shallow boxes. There is no best method. Barrel or bulk storage is, however, better adapted for the commercial grower than box or crate storage. Much also depends upon the temperature and moisture of the cellar. In a dry cellar fruit will usually keep better if it is open than if it is barreled. Personally, I believe that storage in bushel boxes or crates is better suited to the conditions of most home orchardists than storage in bulk or barrels.

STORAGE CELLARS THAT KEEP FRUIT

The cellar is mostly a matter of expediency. A good house cellar solves the problem for most people. I have seen hundreds of cellars that keep fruit about as well as any artificial storage plant ever patented. From one of those old cellars in New England, that I haunted in my boyhood, I had every year Lawrence pears in April, and Roxbury apples in July, when apples came again. The chief difficulty with many house cellars is that they are poorly ventilated, and often poorly drained; and some are not frost proof. A cellar that cannot be thoroughly ventilated, letting the foul air escape and the fresh, cold air enter, cannot keep fruit well. Be liberal with windows in the cellar. Put in a cold-air flue if you can conveniently. Six-inch sewer pipes about ten feet apart, placed close to the floor, answer the purpose well. Drain it so that it will never be wet; keep the air sweet by removing decayed fruits and by ventilation. If the cellar is too dry, causing the fruit to shrivel, supply water. This is apt to be needed in cellars having cement bottoms. Remove excessive moisture with a box of quicklime. The possibilities of the house cellar for storage are not realized by most people.

A method of storage that is practicable only when nothing better can be had is the "dugout," or side-hill cellar. This is simply a room, placed either lengthwise or crosswise of the hill, the roof being covered with soil and three sides being against the hill. If the roof becomes turfed, so much the better. The walls are of stone or wood, and usually with no air spaces. Ventilation should be provided as for other storage houses. Dugouts are usually inferior in efficiency, and certainly less convenient than a good house cellar, but they are sometimes the only kind that is practicable.

The storage of fruit in pits out of doors, which was a common practice in pioneer days, is seldom necessary now. The fruit was stored in windrows covered with straw, and then with soil, with upright tufts of straw projecting through the soil for ventilation. The fruit often kept surprisingly well, but the inconvenience of the method condemns it.

A small ice house is a great convenience. Briefly, the important points in the construction of a cheap ice storage house are these: It contains two rooms, one above the other. The upper is used for ice and the lower for fruit. Building the house against a side hill makes it easier to fill the ice room, and also increases the efficiency of the fruit room. The walls against the soil are preferably stone or brick; the other walls may be of wood, or all may be of wood. The wooden walls should contain one or more dead-air spaces, such as would be made by sheathing a 2x6-inch joist on both sides. These spaces may be filled with sawdust, hay, straw, leaves, excelsior or other material, but generally it is preferred to leave them empty. Below the ice floor is a sheet of galvanized iron or tin to catch the drip, and a pipe conducts it outside the building. The floor joist is not boarded next the wall, and

the cold air settles down from the ice into the room below through the opening. The excess of moisture in the storage room is taken up with quicklime. Ventilation is secured at the top and from windows on the sides. Such a house, while of crude construction, is cheap and serviceable. It is, of course, practicable only when ice is easily obtained.

ICELESS COLD STORAGE

When ice storage is not feasible, an unrefrigerated house, built on the same lines, but with only one room, answers the purpose nearly as well. If this house is built into a side hill it is easier to regulate the temperature. One or more air spaces in the walls are essential. The temperature of this house is controlled entirely by ventilation. In summer and fall, the windows or ventilating flue are opened during the night, when the air is coolest, and are closed very early in the morning. In Northern states, a temperature of about 50° may be maintained at this season in this way. The cold air may enter through windows, wooden flues or tile flues, the two latter being placed near the floor, and extending through the wall and several feet outside. The house should of course be frost-proof.

If a commercial fruit or provision storage plant is handy, it may sometimes be advantageous to get the winter fruit stored there; the usual charge is about twenty cents a barrel per month.

After fruit is put in storage move and sort it as little as possible. Frequent handling does more harm than good, as a rule. Watch the temperature of the cellar and ventilate frequently. The temperature for keeping apples and pears varies from 32° to about 40°, according to the variety, the season and other factors. Apples may even be slightly frozen without harm if they are thawed gradually.



199. A typical home cellar with earth floor. When properly ventilated and dry, it will keep fruit as well as more expensive storage cellars



200. Crates usually have no advantage, save convenience, over barrels. Picking fruit into these crates, grading while picking, saves handling



201. A cheap, efficient fruit storage cellar. Two sides are against a bank of soil; air spaces are in the walls. Good ventilation and dryness are necessary



202. Before cleaning up. The first lot secured by the Yonkers garden school. This is typical of the poorer parts of the large, densely packed suburban towns around New York. Bad conditions for training good citizens



203. After cleaning up. The same lot after it had been voluntarily cultivated by the boys. The garden school has now outgrown this place, but thirty-six girls still cultivate the original lot. The school is supported privately

A New Kind of Garden School—By Mary Leland Butler New Jersey

NOT A SCHOOL GARDEN OR A VACATION SCHOOL—A PRACTICAL SCHEME TO KEEP IDLE BOYS OFF THE STREETS, SHOW THEM HOW TO CONTRIBUTE TO THE FAMILY SUPPORT, AND GIVE THEM FIRST LESSONS IN AN INTERESTING CRAFT—AN ENTERPRISE QUITE INDEPENDENT OF THE PUBLIC-SCHOOL SYSTEM

Photographs by EDWARD MAHONEY

THE garden school at Yonkers, though not the first of the kind, has been so successful and has become so well known in the East that a brief account of its origin and work will be of interest, both to those who think of starting similar schools in their own neighborhood and to those who are glad to see boys kept off the streets, and possibly started on the road which will bring them "back to the farm."

It must be understood at once that this Yonkers school is not a school garden. It has no connection with any school, and does not come within the limits of any board of education's activities. It is a garden where practical gardening is taught to the children of the public and parochial schools, who would otherwise be only too apt to spend the vacation idly, if not worse than idly. As it is not connected with the public educational system, it is quite different from the ordinary vacation schools. Those open for work only when the school session ends, late in June. The Yonkers garden school follows the more logical and appealing method of beginning its work when Nature does, in the early spring. This year it was opened on April 15th, and it will remain open until the last of the growing crops shall be harvested by the young gardeners, about the beginning of October. By making such an early beginning, there is time to raise more than one crop on each lad's plot. The crop belongs to the boy who cultivates it, and is his to do with as he will. This plan of opening early and closing late has solved the problem of maintaining interest in the work. In the third year of its existence the applications for admittance to the school were greatly in excess of those of any former year.

The school was begun three years ago on

a small scale. Two ordinary city lots were obtained—veritable rubbish heaps, the receptacle of the odds and ends of the neighboring tenements. These were cleared and fitted for the use of the school, and garden plots laid out whereon thirty-six boys worked happily all the season. So much did they enjoy the work that thirty of them—all who were so situated as to be able—applied for admittance the second year. The school was then moved to its present larger quarters, and



204. Measuring the first pick

the original lots given up to a class of thirty-six girls, for whom and their successors it is still maintained. The girls, it may be said, raise flowers chiefly. The boys, though they may grow flowers if they wish, prefer to raise vegetables. A large majority of them devote a part, at least, of their gardens to growing cabbages.

As it exists to-day, the garden school occupies a lot with an area of one and three-quarters acres. This is divided into 240 individual gardens, almost all of them 10x19

feet, a few smaller lots being kept for little fellows who cannot care for full-sized gardens. The plots, marked off by main paths three feet wide and cross paths one foot wide, are thus large enough to allow crops of some size to be raised. This fact also stimulates the boys to constant work, for on them they can and do raise enough to help very decidedly in providing the family meals for the summer.

THE EXPLANATION OF ITS SUCCESS

In the work of turning what had been a barren pasture into a garden the heavy part was done by outside labor, but the boys, as in the first year on the much smaller lot, were called upon to do the final raking, leveling and removal of stones. The garden is therefore largely of their own creation, and this fact again serves to make them interested in its continuance. Another element in fostering this feeling of proprietorship is the fact that each boy pays dues of two cents a week. The expenses, of course, are much greater than the \$4.80 a week brought in by dues from 240 boys, and are met by private subscription; but the boys feel that they have an actual personal and financial interest in the gardens, and give much more care to them than they would if the plots cost them nothing—much more than the average well-to-do child gives to the garden prepared by a professional gardener for him to play in with tools supplied by his parents.

The result of these well-planned schemes for creating and maintaining interest in the work is shown by an average daily attendance of eighty during the entire season. Only sixty of the 240 boys who started work in the spring of 1904 dropped out, and almost all who did because they had secured



205. Picking beans to take home. Each boy gets what he raises. He pays two cents a week for rent, plowing, manure, etc. The weekly income from 240 boys is \$4.80. The yearly expenses are about \$1,600

work in the factories or stores, or because their families had moved away from Yonkers. The places of those who withdrew were filled at once from a long waiting list. A newcomer is required to settle any unpaid dues of his predecessor, and to pay him for his outlay of time and money up to date. If the regular dues are not paid, they are carried as a lien and charged against the plot, and deducted from the proceeds of the crops raised on it.

On being admitted to the school, each boy receives a ticket and a badge, and is assigned to a plot bearing the same number as that on his badge. He gets also a memorandum book, in which are written his name, address, age, badge number, and the name of the public or parochial school which he attends. Then the seeds which he wishes are issued to him, and he is allowed to use the tools needed. Each day that he works he notes in his memorandum book exactly what he does, and—when the time comes—what vegetables are up, how they are growing, what weeding is done, what he gathers, what his daily crops are worth at the current market prices, and what he does with them—whether he sells them to the garden itself or takes them home for use by his family.

He is not turned loose in his garden, however. Practical instruction is given to him by Mr. Edward Mahoney, the superintendent, a professional gardener, without whose advice and direction he plants nothing and



206. Hoeing. Sixty of the boys dropped out, most of them to work in factories, but their places were filled at once

“pulls” nothing. The superintendent is present continually while the school is open, and attends to all the essential details of management, being assisted by a clerk and a laborer, and from time to time by volunteer overseers, who see that his instructions are carried out.

MONITOR WORK CONSIDERED AN HONOR

The police work of the garden—there is less of it required each year—is in the hands of twelve of the older boys, who wear distinctive badges as monitors. These boys, appointed because of their good behavior and ability to keep the others in order, form a sort of reception committee. It is their duty to show visitors about the garden, and they are rather expected not to accept “tips” but to give to them samples of their own crops. A monitorship, therefore, is more than



207. Sowing seed. Every boy keeps track of what he raises, its value at market prices, and whether he sells it or takes it home

merely an unpaid office; it is an expense to its holder. Yet it is a high honor to be chosen a monitor, and no boy appointed has declined to take the place.

Of course, as the school opens two months before the day schools close, most of its work is done in the afternoon. Even during the summer, while the regular schools are closed, the same rule holds, the garden school being open after one o'clock. After that hour the superintendent and his assistants are on hand, and the daily work begins with a rush.

With 240 boys demanding attention, practically no instruction except in vegetable growing can be given. But there are certain experimental plots on which the superintendent raises field crops, and boys who show an interest in farming rather than in gardening are instructed in agricultural work on these, so far as is possible. The same demands of the boys for assistance and the limits of the lot used for the school prevent any attempt to decorate the grounds. A few of the boys grow flowers; and near the tool house and office the superintendent is raising perennials, hoping to interest some of the



208. Marking the row. There are twelve “monitors.” These boys also show visitors about, and cannot accept “tips.” The office is an expense, but no one has yet declined the honor

boys in growing such flowers, the demand for which is daily growing greater. But a highly cultivated market garden is in itself picturesque, and the garden school is in effect such a garden.

It is encouraging to note here that the school has had an excellent effect on its surroundings. The yards and lots near the original school have been beautified, and the grounds of a public school opposite the present garden have been put in order and are kept in good condition. The Board of Education, moreover, has asked the managers of the school to open other schools elsewhere in Yonkers under its patronage. This may be done later, but at present the managers are sufficiently occupied with the schools they have.

NO SET COURSES OF INSTRUCTION

No regular set courses in gardening are given at the school. While it might be advantageous in some respects to offer such courses, it must be remembered that the boys of the garden school are mostly small, that they are at school, and—most important of all—that they are looking forward to regular work in factory or store. Even their gardens have to be surrendered when regular work offers a chance to add to the family exchequer. It is therefore always uncertain how long they will be able to attend the school.



209. Watering. Most of the work is done in the afternoon, even when the schools have vacation

The same reasons that prevent the managers from offering regular courses of garden work prevent them from holding out rewards for those who attend the school regularly. There is no examination, no diploma, no graduation day. The school was not intended to turn out qualified gardeners; it was planned to take the boys off the streets, give them something to do that would interest them, and at the same time let them see that it was within their power to contribute to the family support. And that end it reaches.

WONDERFUL IMPROVEMENT IN CONDUCT

But here it may be said that the teachers in the public and parochial schools report that the boys of the garden school are the best under their care; that their conduct is better, their standing in class higher, their intelligence and powers of observation more highly developed, on the average, than that of their fellows who are not able to attend the school. This is really only natural; for the boys have to "toe the mark" as well as hoe the line. Discipline almost military is imposed on them—and they like it. They get their tools and books from the clerk when they come to work, and each boy is responsible for everything he takes from the office to his plot. He must make up his memorandum book daily before going home, must return the tools he has used to their proper places in the tool house—it is only to replace the tools that he is permitted to enter that place, by the way. The tools are issued to him through a window; but he must put them back himself.

So well has the system worked that no boy has been expelled. Nor has any case of theft been known among the boys of the school. They come from the same class of chaps that supplies the larger proportion of pick-pockets, sneak thieves and petty criminals; but their work in the garden school has thus far given them a start which seems to have kept them clear from the temptations which beset the poor boy in a large manufacturing town.

"What do you make at your public



210. The garden school at Yonkers on May 1, 1904. Unlike either the typical school garden or vacation school, this school continues throughout the entire growing season, from April to October

schools?" asked a German of an Englishman—he had mixed up his English verbs "to make" and "to do."

"Men," answered the Englishman. The same answer seems to be proper in connection with the Yonkers garden school.

The example of the Yonkers school has been studied by other places. In Orange, N. J., a garden school was started this year;



211. In the shade of his own corn

and Montclair, N. J., is considering the question of having one. Orange is a manufacturing town of about the same size and kind as Yonkers, so that its experiment is made under much the same conditions.

The question of expense naturally arises. The actual cost of maintaining the Yonkers school during the first year in its present situation was \$1,532.02, accounted for as follows:

WHAT THE YEAR'S WORK COSTS	
Portable house (11 x 20 feet).....	\$265.40
Installing water.....	51.28
Tools:	
50 hoes.....	\$16.67
50 rakes.....	16.88
50 weeding irons.....	7.40
24 watering pots.....	10.60
12 boys' spades.....	12.00
1 wheelbarrow.....	3.50
2,000 feet garden line.....	3.00
25 feet rubber hose.....	5.00
Other tools used in laying out garden, etc.....	20.17
	39.61
Rent of land.....	35.00
Fertilizer.....	39.00
Seeds.....	30.00
Stationery, printing, etc.:	
300 notebooks.....	\$15.82
Membership cards, etc.....	8.75
300 badge buttons.....	10.00
26 award badges.....	5.04
	39.61
Stakes and labels.....	18.41
Flag, rollbook, blackboard, etc.....	8.79
Repairing fence.....	5.00
Superintendent's salary.....	600.00
Clerk and assistant, for the season.....	95.33
Laborer's wages, for the season.....	249.00
	953.13
	Total ... \$1,532.02

The value of the produce raised, computed at market rates, was \$1,200.

The items of rent, water rates and salaries would vary in each place; the others may be taken as practically fixed. Some of them, of course, are in the nature of investments, while still others will have to be met each year. But, altogether, \$1,500 is not much for a city to pay to make men out of its street boys.

Of course, when the board of education of a city feels that it can undertake the management of garden schools, it is advisable that it should do so; there is then no chance that the work should even appear to be a charitable operation. That is the custom in Germany, where the idea of such schools originated. But where the educational authorities do not undertake the work, private enterprise is properly employed; and experience has shown that the city authorities sooner or later will express a wish to have public garden schools of their own.



212. The garden school on August 1st, showing the beauty and attractiveness of well-grown vegetables. The girls prefer to grow flowers; the boys like vegetables better, especially cabbage



213. This sort of window garden (say 4½ x 12 feet) could be duplicated for about \$50 when building, or it could be attached to any frame dwelling for \$25 to \$100. Why not have such a place this winter and make it radiant from Christmas to Easter with bulbous flowers?

Bulbs for the Window Garden

HOW TO MAKE THE HOME WINDOW BRIGHT WITH FLOWERS FROM JANUARY THROUGH MARCH
—THE WHOLE STORY IN A NUTSHELL—NO GREENHOUSE OR COSTLY APPLIANCES NECESSARY

PUT the bulbs as soon as received in pots, pans or boxes, water thoroughly, cover them with a two-inch layer of ashes, and place them in a cool, dark cellar or outdoors until the ground freezes. Bury the pots six inches deep in soil, and leave them alone for five or six weeks, except for moderate watering if the season is very dry. The whole secret of bulb culture is to get a big growth of roots without starting the tops until the bulbs are actually wanted for forcing. When the ground begins to freeze, bring the bulbs into a cellar the temperature of which should be 40° to 50°. Begin forcing at 60°. Most American living rooms are too hot and dry for the best results in growing plants. Try to keep the temperature below 71°. A pan of water on the stove or register will supply moisture to the air. After forcing begins, apply plenty of water. Don't sprinkle the surface daily.

Plant hyacinths singly in five or six-inch pots, leaving a third of the bulb above the soil. Set three to five tulips in a five-inch pot. Use three or four bulbs of narcissi in a five-inch pot. Cover these and tulips with an inch of soil. Plant one oxalis in a five-inch pot, or two in a six-inch pot. Plant six or eight crocuses in a six-inch pot and cover one inch. The other bulbs are small; plant five or six of them in a five-inch pot and cover half an inch. Bits of charcoal in the soil will keep it from getting sour.

Most of the bulbs can be grown in sand and water, which avoids all danger of soiling curtains or carpet, but the bulbs are exhausted by this treatment and you cannot save them to plant out later in the garden.

The Chinese sacred lily is grown in

a shallow bowl of water containing enough pebbles to hold the bulbs in position.

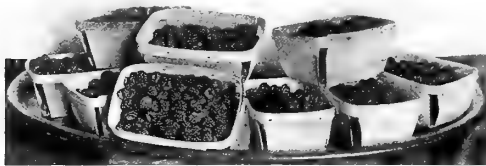
Hyacinths in glasses are adorable. Buy the single-named varieties, which are specially named as best suited for this purposes. Use soft rain water and put in a little charcoal. Keep the base of the bulb in contact with the water. Don't let the water rise much above or any below. Keep the glasses in a cool, dark closet for ten days or until roots are well formed; then give plenty of light and air. Do not put them near a gas jet. On very cold nights move them from the window to the table; they cannot stand frost. Never let the water freeze. Change the water every two or three days; the "patent" glasses make the operation much easier. A few drops of diluted ammonia added to the water once a week will act as a stimulant.

The Wineberry, An Amateur's Fruit—By Ida M. Angell New York

A BERRY WHICH IS TOO SOFT FOR THE MARKET, BUT IS CONSIDERED BY SOME TO BE SUPERIOR TO THE RASPBERRY FOR HOME USE—A COMPLETE ACCOUNT, INCLUDING RECIPES FOR CANNING AND PRESERVING

Photographs by the author

AFTER ten years' experience we still feel that the wineberry is one of the best small fruits for the amateur. Our garden is small, but if we had to give up something it would not be wineberries. They are delightful as fresh fruit for hot weather, on ac-



214. One day's picking, nine pint baskets of rich, ripe wineberries, at the height of the season (July 25th), from a row fifty feet long

count of their pleasant flavor; with plenty of sugar we prefer them to raspberries. They make one of the best of jellies, very like currant jelly both in taste and looks. They are also good for jams, preserves and canning. The bushes and the size and form of the fruit are similar to raspberries, but the fruit is dark, transparent red, like a currant, and the flavor is like a combination of the two. The season lasts for three weeks in the vicinity of New York, from the middle of July to the first week in August.

Our bushes yield every year, and have given us enough to eat fresh and to preserve for winter. They are worth raising for the



215. A bush of wineberry (*Rubus phoenicolasius*) growing in the shade, under a tree, where it seems to thrive even better than in the sun, both plants and berries being larger. It winter kills in some sections, and no one can tell beforehand where it will thrive. Try it for yourself unless north of Boston

jelly alone. Unripe berries should be used. If left on the vines till dead ripe they will make a darker, guava-like jelly, that has a very good taste but is harder to make and may require gelatin to thicken it.

Put the unripe berries in the inner section of a double boiler without water. In the outer section put cold water and set on the stove until the berries are heated until soft. Mash and strain and boil the juice twenty minutes, adding an equal bulk of heated sugar stirred until dissolved. Bring the mixture to a boil quickly, and pour at once into hot jelly glasses. It is the quickest of all jellies to thicken; put in a cold place, it is hard and solid in an hour.

We also make a good hot-weather drink from the wineberries. They are just covered with water and heated till soft, then strained. One-third the bulk of sugar is added and it is boiled up and bottled for present use, to mix with an equal amount of cold water.

Our experience is that the plants are hardy, easily cultivated, bear transplanting well in fall or spring, and easily adapt themselves to climate and soil. But, on the other hand, many people report failures with them—the plants seem to winter kill in one garden and to thrive in another one close by.

Quite independently of the plant as a fruit, it is very valuable as an ornamental shrub. The under sides of the leaves are silvery white, and in a wind the waving of the silver and green colors is very charming. The calyx forms a bur, like a moss rosebud, which provides a covering from before the blossoming season, after which it closes and protects the berry until it is ready to ripen. As the fruit turns red the bur opens again. This and the slight honey-like stickiness on both bur and berry seem to protect against all insects. But the stickiness is no disadvantage, for they are the cleanest of berries to pick and to handle. Each bunch contains berries in all stages, from the small, hard burs to dead-ripe fruit, ready to fall to the ground. The canes are also covered with a reddish, hairlike growth.

Our patch was started from about a dozen plants bought two or three years after their introduction, at the cost of one dollar, and the value of one day's picking in the height of the season would almost equal the original cost of the plants. Four quarts on July 25th was our best picking this year.

The plants were set in a rough spot, next to a stone wall, but the place evidently agreed with them. They have flourished and taken possession, rooting (like blackberries) from the tips of their canes until there was a growth which we had to clear out, transplanting some last summer (which grew abundantly and bore well this season).

If left alone they make a thicket. We do

not understand where the report originated that they winter kill. One authority recommends cultivating until the second year as the fruit is setting, claiming that later culture injures the setting of fruit and encourages a continuation of wood growth that may win-



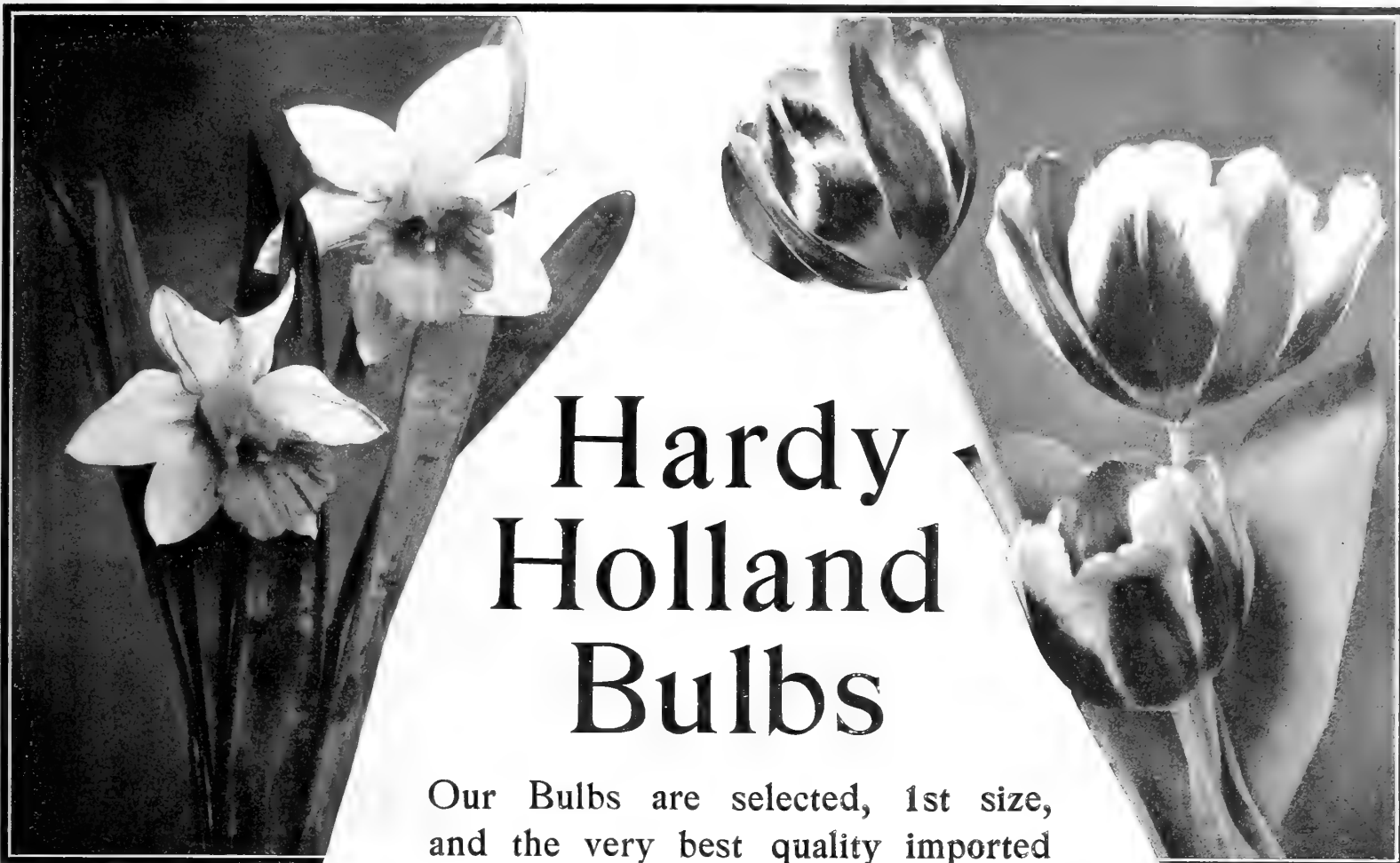
216. The wineberry is worth growing for its decorative effect when in fruit. The wide-open bur in the middle of the bunch is where a berry has ripened and been picked. The others are still unripe. The bur is covered with red hairs, and does not open until the berries are turning red

ter kill. According to that, lack of cultivation is no drawback. In spite of stony ground and the ignorant culture, pruning and transplanting by an Italian laborer, our plants have run riot and claim more room than we can spare. Those under the trees, in partial shade, have larger berries and more of them and are the stronger-looking vines.

The new canes that grow this year are the bearers of next year. Those that have borne this year can be cut off after the bearing season or left until March. If the plants are cut at a convenient height they send out side shoots that bear the following season.



217. Wineberries are the size and shape of raspberries, the color of currants, and have a flavor like a combination of both. They are excellent for home use, but are so tender and juicy they cannot be shipped



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Cottage Maid, pink30	2.00	Thomas Moore, orange35	2.50
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- 3 Calla Lillies
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500 Bulbs for \$5.00

- 50 Hyacinths, special bedding
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- 50 Tulips, finest mixed, double
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Making Apple Cider

CIDER making offers a good opportunity of saving the surplus apples from the home fruit garden, after the best have been put into the cellar for winter use, thus making valuable apples that otherwise would be thrown away. A bruise which would render an apple unfit for storage does not impair it as a source of cider.

The best cider is not made from sweet apples, or from apples that have little juice, such as Ben Davis, but from good, juicy, sour kinds, such as Northern Spy, Baldwin and the like. It is often advisable to mix a few sweet apples in with the sour ones to soften the taste of the cider, but this is a matter of taste.

If good specimens of Northern Spy are used, the cider will prove an expensive luxury. Therefore, any undersized apples and any that become bruised in handling may be used.

For the man who intends making only a small amount of cider each year—enough for consumption in his own household during the winter—a mill worked by hand and pressing the pomace of only two or three bushels of apples is the most practical. A mill of this sort will cost anywhere from \$10 up, according to the size. The usual amount of cider that can be pressed from a bushel of crushed apples is four gallons. This amount varies, so that while some bushels give five gallons others only produce two gallons. The introduction of steel knives to cut the apples, and modern methods of pressing out the juice from the pomace, has made old farmers shake their heads. They declare that the old wooden crushers produce the finest cider and can never be equaled.

The old-fashioned method of preparing pomace for pressing is the best. Upon a layer of rye straw is placed a layer of pomace. Then more straw and more pomace until the press is filled. After this "cheese," as it is called, is pressed the first time, the pressure may be relieved and the cheese stirred up with a crowbar. Then the pressure should be applied again.

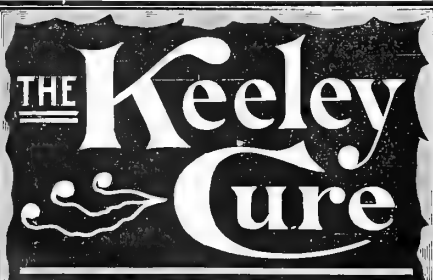
After the cider has been all squeezed out it may be placed in casks, with bunghole uncorked, and left for several weeks to "work." Then the bungs can be put in place and the cider is ready for use.

After the cider is drawn off for the first time it can be clarified by breaking and dropping twelve or more eggs in the barrel. This is especially good practice if it is intended to bottle the cider.

Cider, if kept perfectly air tight from the time it is made, will usually keep sweet all winter if placed in new casks, but will become harder all the time. Various preservatives are used to keep it sweet and yet non-alcoholic, but they rob the cider of its flavor.

Good vinegar can be obtained by leaving the bung out of the barrel, not only until the cider stops working but until it gets sour. For the first few days the cider is left to stand to make vinegar it should be stirred up by means of a stick inserted through the bunghole.

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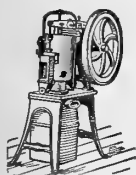
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Has it ever occurred to you what it would mean to bring that spring, down in the meadow or up by the roadside, right into the door-yard and living-rooms of your house, right into the barn in front of every horse and cow—handy for watering the stock in winter, all ready for sprinkling the lawn or garden in the drought of summer, and a fine thing for your own bath every day in the year? These are only a few of the things that can be done anywhere in the country with a



Hot-Air Pump

Remember that these pumps are not steam-engines, but machines of low power, operated solely by hot air, automatic in their action, requiring no skilled attention, so simple that any servant or farmer's boy can start and stop the little flame that gives them life. The cost of operation is almost nil, while the delivery of water is absolutely reliable at all times and seasons.

Capacity 100 to 100,000 gallons of water per diem. One of these pumps, representing a permanent investment which will outlast a generation, can now be bought at the very low price of \$108. Descriptive catalogue "U" sent free on application.

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make gardening a pleasure or a profit. They double your capacity, especially in the early growing time when everything needs quick action. Send for our book, "Iron Age," describing Seed Drills, Wheel Hoes, Potato Planters, Hand Cultivators, etc.
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Is Guaranteed to go twice as far as paste or liquid polishes. X-Ray is the ORIGINAL Powdered Stove Polish. It gives a quick, brilliant lustre and Does Not Burn Off. Sample Sent if you address Dept. 9.

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BACK TO NATURE

WE have many books dealing with nature—in its wild state as well as under man's improvements—and we shall be glad to furnish information to readers of **THE GARDEN MAGAZINE** upon request. Of recent issue, we have:

<p>Our Native Orchids By William Hamilton Gibson and Helena Leeming Jelliffe. Fully illustrated by Mr. Gibson's drawings. Net, \$1.35. (Postage, 14c.)</p> <p>Roses and How to Grow Them Profusely illustrated from photographs. Net, \$1.00. (Postage, 10c.)</p> <p>How to Keep Bees By Anna Botsford Comstock. Illustrated. Net, \$1.00. (Postage, 10c.)</p> <p>How to Make a Vegetable Garden By Edith Loring Fullerton. Illustrated from photographs. Net, \$2.00. (Postage, 20c.)</p>	<p>How to Make a Flower Garden Beautifully illustrated from photographs. Net, \$1.60. (Postage, 16c.)</p> <p>The First Book of Farming By Charles L. Goodrich, farmer. 63 pages of helpful illustrations. Net, \$1.00. (Postage, 10c.)</p> <p>The Dog Book By James Watson. Parts I, II and III ready. Elaborately illustrated. To be in ten parts. Each, \$1.10, subscription.</p> <p>The Poultry Book In three volumes. 672 illustrations, more than 1,300 pages—\$13.60, subscription.</p>
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All of which are full of outdoor spirit.

THE GARDEN MAGAZINE

COUNTRY LIFE IN AMERICA

THE WORLD'S WORK

DOUBLEDAY PAGE & CO NEW YORK



Plant Roses Now

Make sure of lots of beautiful blossoms next Spring by planting our large, hardy, field-grown roses in the open ground this Fall. That gives roses a good start and makes luxuriant early bloomers. Fine, strong, vigorous plants of the very choicest roses best adapted for Fall planting.

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Your choice of 20 varieties. Among them are:

General Jacqueminot. Rich crimson.
Magna Charta. Bright rosy pink.
New Century. Exquisite pink.
Ulrich Brunner. Rich crimson-scarlet.
Margaret Dickson. Pure white.
Prince Camille de Rohan. Deepest crimson.

Write to-day for complete list and description of roses. We'll also send our **Art Booklet** about Roses if you mention THE GARDEN MAGAZINE.

The Conard & Jones Co.
 Growers of the Best Roses in America
 Box P, West Grove, Pa.



A Use for "Windfall" Pears

"WINDFALL" pears are not generally of much account, but we can testify that there is one good use for them: they can be baked, either for immediate use or to can for winter. Pears with a decided flavor are better than the tasteless ones for this purpose.

Here is the rule: Fill a deep pudding dish with pears, cored, pared and quartered. For two quarts add one cup of sugar and one cup of water. Bake, closely covered, in a very moderate oven several hours, or until dark red. Hard pears, or "windfalls," are delicious pared and baked as in the preceding receipt. When done, and still hot, they may be sealed in glass jars, and will keep indefinitely. By preparing one large dishful every day during the pear season a supply of wholesome sauce may be easily obtained from fruit that is often left to waste on the ground.

RIPENING PEARS

The exact time to pick and "smother" pears varies with the neighborhood. In the vicinity of New York Clapps is ready about the middle of August and our Bartlett pears the end of the month—before they soften, but after they reach full size. Pick them very carefully by hand, and wrap each one in newspaper as it is taken from the tree. Stored thus in baskets in the house they will ripen in a few days. They are kept from light and air as much as possible and looked over and rewrapped every two days until they soften, when they will need handling every day, or they will rot faster than they can be eaten, as they spoil very easily. Our two young trees give us about five bushels, and it is quite a task to keep them sorted, but they are too good to lose for the lack of a little care. One year we stored them in the cellar, but lost nearly all of them; a moist place does not suit them. Sifted coal ashes is recommended as a covering during ripening. Though it may be quicker to handle them in ashes than to wrap them in newspapers, it is not so cleanly.

We have always picked all the pears of a kind on the same day. The disadvantage of this plan is that they ripen all at once with a rush. This year we shall try picking each tree in instalments, a few days apart. First all the largest and fairest, then the medium ones, leaving the smaller ones still longer, in the hope that they will ripen gradually.

M. IDALL.

New York.

The Warmest Sheathing

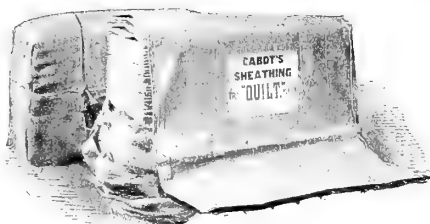
Wind and frost proof. Not a mere felt or paper, but a thick matting that retains the heat like a bird's plumage. Six times as warm as the best building papers, but costs less than one cent a foot. Keeps warm rooms warm, or cool rooms cool, and is decay and vermin proof. Send for a sample of

Cabot's Sheathing "Quilt"

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Also maker of **Cabot's Shingle Stains**, for staining and preserving exterior woodwork.
Conservo Wood Preservative, for preserving underground woodwork.



Hardy Bulbs, Plants and Shrubs

An immense importation of large-sized healthy Tulip, Hyacinth, Narcissus, Crocus and other hardy bulbs.

SPECIAL OFFER Livingston's Selected Mixed Tulips. Doz., 20 cents; 100, \$1.25; 500, \$5.50; 1,000, \$10.00. Delivered anywhere.

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3 Hyacinths, 5 Freesias, 2 Allium, 1 Calla, 5 Oxalis, 4 Narcissi—20 fine bulbs for pots—only 50 cents postpaid.

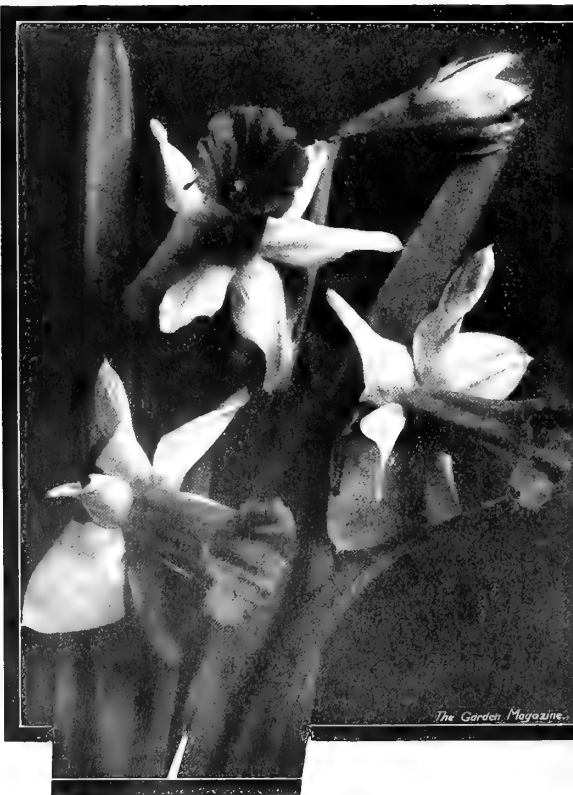
HARDY PLANT COLLECTION

Our own growing, one strong plant each, Paeony, Phlox, Pink, Bleeding Heart, Gaillardia, Larkspur, Coreopsis and Shasta Daisy. Eight in all for 75 cents.

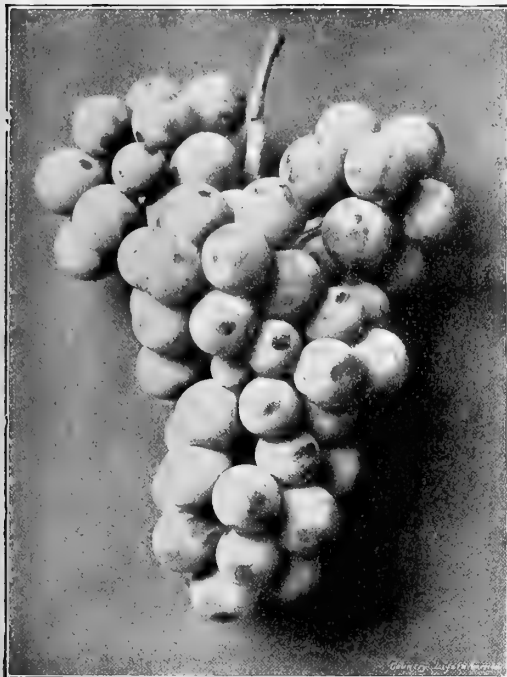
We offer other fine collections; devote eight pages of our fall catalogue to bulbs, six pages to house plants, five pages to hardy plants.

Catalogue sent free on request. The fall planting of all hardy things is becoming very popular. See articles on this subject in this magazine.

LIVINGSTON SEED CO.,
 Box 403, COLUMBUS, OHIO



The Garden Magazine



Grape Vines

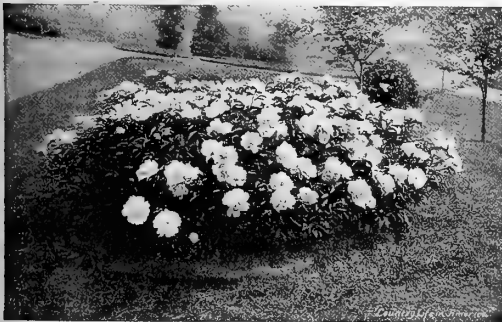
NO garden is complete without a sufficient number of grape vines to supply an abundance of this delicious fruit. For nearly 40 years we have been furnishing high-grade vines for this purpose.

¶ We will send ten large vines of the best table varieties, including three red, three white and four black, for \$1.00, delivered free. Send for our elegant Illustrated Descriptive Catalogue and Price-list. It will tell you how to plant, cultivate and train them.

T. S. HUBBARD CO.
Grape Vine Specialists FREDONIA, N. Y.

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Photograph taken at Paterson, N. J., June, 1905

Royal Peonies

PEONIES OF QUALITY
(SEE SPECIAL OFFER IN SEPT. ISSUE)

I do not offer the largest collection in America—not several hundred varieties—but 50 of the cream of those now in cultivation. Strong 2-year outdoor-grown *Roses*, "The World's Best." *Hedge Plants* that ornament and last. All of above honestly described in

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Our 20 Years of Film EXPERIENCE

If there is any one line of business in which experience is more important than in any other, that line is the manufacture of highly sensitive photographic goods. And of all photographic processes, film making is the most difficult. It has taken us more than twenty years to learn what we know about making film.

And in that twenty years we have also learned how to make the perfect raw materials which are absolutely essential to the manufacture of film—materials which cannot be obtained in the market with a certainty that they will be what they should be. We nitrate our own cotton for the film base; we nitrate our own silver for the emulsion. We go further, we even make the acid with which the cotton and silver are nitrated. Wherever it is possible to improve the completed product by manufacturing the raw material, we erect a factory and make that raw material.

Five years ago we felt that we were approaching film perfection, but no concern, even if it could make film as good as that *was*, could compete in quality with the Kodak N. C. Film of to-day. But experience is not the only advantage that our chemists and film makers enjoy. They have access to the formulae of the chemists who make the best dry plates in the world. The Kodak films of to-day have in them the combined knowledge of the most expert film makers and the most expert plate makers.

The wise amateur will be sure that he gets the film with experience behind it. There are dealers, fortunately not many, who try to substitute inferior films from inexperienced makers, the only advantageous feature which these films possess being the "bigger discount to the dealer". Amateurs, especially those who leave their Kodaks with the dealer to be loaded, should make sure that substitution is not practised against them.

The film you use is even more important than the camera you use. Be sure it's Kodak film with which you load your Kodak.

Remember:

If it isn't Eastman, it isn't Kodak Film.

Look for "Eastman" on the box.

Look for "Kodak" on the spool end.

EASTMAN KODAK CO.

Rochester, N. Y. The Kodak City.

\$18 Couch, Bed, Wardrobe for \$10



Handsome High-Grade Couch and Double Bed Complete with Spring, Mattress and Founce; and Wardrobe Box.

The mechanism is so simple that a child can operate it. Made of very best quality steel angles, attractively and durably enameled. Good dark green denim-top mattress, filled with fine carded wool. **Rip Van Winkle Spring** guaranteed twenty years. Cedar-stained pine box rolls out from beneath on casters. Closed, couch is 2 ft. 2 in. wide, 6 ft. 2 in. long; as bed 4 ft. 2 in. wide. Send \$10, money or N. Y. draft, and we will ship couch to you promptly. Bargain at \$18, but we make this low price to introduce samples of our goods in every community.

Any article manufactured in our factory—Reclining Couch, Davenport, Bed Couch, Dropside Couch, Ironfold Bed, Mattresses—**may be returned at our expense if not thoroughly satisfactory.** We ship direct from factory to you. **Send for our Literature and Prices.**


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If its price - buy the cheap kinds.
If quality counts - you must insist
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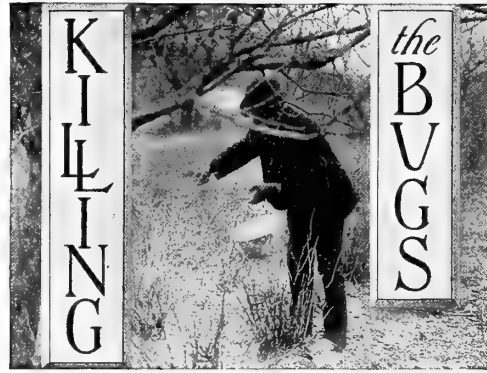
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**PURITY,
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YOUR GROCER SELLS IT.



Cleaning Up to Destroy the Winter Shelters

DURING October there is opportunity for doing really effective work by a general cleaning up and destruction of all loose material which may serve as winter shelters for insect pests. Any loose bark on old trees in the orchard should be removed and burned; in that way many hibernating insects, like the codlin moth, will be destroyed.

In places infested by canker worms, early in the month make all preparations for banding the trees. The fall species will begin ascending during warm spells from about the middle of October, while the spring forms are found upon the trees through March and into April.

Closely examine shade trees for the egg belts of tent caterpillars, the conspicuous, snowy egg masses of the white-marked tussock moth and other indications of insect infestation; on finding them, destroy them. By this detail the probable number of insects for next spring will be enormously lessened.

Thoroughly clean up the vegetable patch, and remove and burn squash vines as soon as the fruit is gathered, thus destroying many immature squash bugs. This procedure will materially reduce the numbers of this pest another year.

All old vines, dead leaves, etc., should be collected and burned, in order to destroy the insects seeking refuge therein, among which may be named rose-leaf hoppers, apple-leaf miners of various kinds, and striped cucumber beetles.

Weeds growing along fences and beside ditches bordering on cultivated grounds must be burned as soon as the vegetation is dry enough, because they afford winter shelter for numerous insects, such, for example, as the army worm.

E. P. FELT,

New York State Entomologist.

Seasonable Suggestions

IN October you can often buy manure more cheaply and have it moved before the roads get bad.

You can have the foundation of a greenhouse laid any time before the ground freezes—say November 1st—but October 15th is safer.

Have you stocked your winter window garden? What are you planning to have in flower at Christmas and Easter?

Roman hyacinths started in early September have actually been known to bloom by Thanksgiving! They are the easiest bulbs to have in flower for Christmas.

PULVERIZED SHEEP MANURE

One barrel
of Dormant Sod Brand Pulverized Sheep Manure is equal in fertilizing strength—will go further and is more satisfactory—than two wagon loads of barnyard manure for garden and lawn. No waste, no odor, no refuse to blow about or rake up.



Fall and Spring are best times to put down Sheep Manure and get results desired.

Full barrel Pulverized Sheep Manure delivered, freight prepaid to any point in the U. S. east of Denver \$4.00. Remittance must accompany order. Write for quantity prices and booklet.

Dormant Sod Co.
19 Union Stock Yards, Chicago.

FREE to lovers of palms and house plants a handsomely printed booklet, "The Care of Palms." This is an expert treatise on the life, health and beauty of house plants, and tells in detail how to care for them, accelerate their growth, and preserve them under all conditions. Send postal to-day. Copy of the booklet will be sent, postpaid, upon receipt of your name and address.

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GEORGE T. POWELL, President
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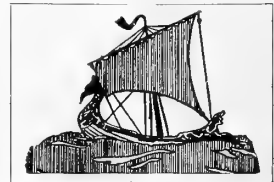
GINSENG \$25,000.00 made from half acre. Easily grown in Garden or Farm. Roots and seeds for sale. Send 4c. for postage and get booklet D. F., telling all about it. McDOWELL GINSENG GARDEN, JOPLIN, MO

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under Prof. Wm. P. Brooks of the Mass. Agricultural College, and Prof. John Craig of Cornell University.

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Every reader of THE GARDEN MAGAZINE is invited to send for a free copy of our eighty-page catalogue and full information in regard to our home study courses.

An advance of twenty-five per cent. in our tuition rates will go into effect November 1st, 1905. We hope that all who are interested will *write at once* and arrange to register in season to take advantage of our present rates.



JOHN CRAIG
Professor of Horticulture in Cornell University

THE HOME CORRESPONDENCE SCHOOL
Department 8, SPRINGFIELD, MASS.

DREER'S May-flowering or Cottage Garden Tulips

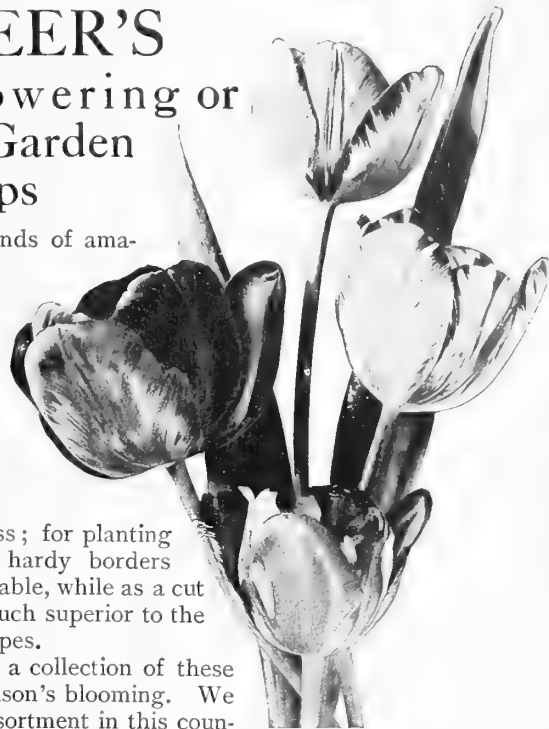
There are thousands of amateurs who are unacquainted with this beautiful class of tulips. Those who know them are unstinted in their praise of the exquisite forms and wonderful colorings which they possess; for planting in shrubbery or hardy borders they are unmatched, while as a cut flower they are much superior to the early flowering types.

You should get a collection of these *Now* for next season's blooming. We have the finest assortment in this country, all of which are described and offered, and some shown in colors in our

AUTUMN CATALOGUE

which we will mail Free on application. This catalogue contains, in addition to Bulbs for present planting, a very complete list of Hardy Plants, Shrubs, Seeds, etc., which can be planted in autumn.

HENRY A. DREER, Philadelphia, Pa.



CLAIMS AND COUNTERCLAIMS

By MAUD WILDER GOODWIN

TWO EDITIONS WITHIN A WEEK OF PUBLICATION

Author of "White Aprons," "Four Roads to Paradise," Etc.

The story of a strong man torn between love and gratitude. It tells how Anthony Dilke met the issue between his debt to the man who had saved his life—and his duty to the girl he cared for. (\$1.50.)



"'Claims and Counterclaims' is to be hailed as combining the many fine qualities that go to make a novel of high merit. Its unique plot, its brilliant execution in both dialogue and movement, are all crowned by a novel's *raison d'être*—its absorbing interest—a story of intense interest, one that will be breathlessly followed from the first till the last page."

—New York Times.

THE GARDEN MAGAZINE COUNTRY LIFE IN AMERICA THE WORLD'S WORK
DOUBLEDAY PAGE & CO NEW YORK

BISSELL'S

If in Doubt

Ask a neighbor or friend what they think of the Bissell Sweeper as the modern, sanitary appliance for cleaning your carpets or rugs. You can make sweeping day a pleasant anticipation, instead of a day to be dreaded, by using a BISSELL, the leading carpet sweeper of the world.

It will add many years to the life of your carpets, to say nothing of the saving of time, labor and health. Just consider what it means to do your sweeping in one-quarter of the time, and with 95% less effort than the corn broom requires.

The Bissell sweeps easily, noiselessly, thoroughly, dustlessly, and lasts longer than 50 corn brooms.

Buy now, send us the purchase slip, and we will send you free a neat, useful present.

The name Bissell marks the genuine sweeper. Sold by all first-class dealers.

Prices, \$2.50 to \$5.00

Bissell Carpet Sweeper Co.

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(Largest Sweeper Makers in the World.)

Grand Rapids, Mich.



What Peter Says

Before ordering Dutch Bulbs see my **Little Brown Book**. Your address to-day brings a copy to your door. The **Brown Book** is full of useful information. Prices right, stock the best. HENRY SAXTON ADAMS, Jamaica Plain, Mass.

Fall Planting

Hardy Roses planted in the fall give the best results. Also Paeonies and Phlox. Place your orders early. Plant Walsh's New Hardy Rambler Rose

"Lady Gay"

which received the Gold Medal at the Royal Botanic Gardens Exhibition in London, England, July 9th, 1905.

My catalogue contains list of all the best varieties of Hybrid Tea, Hybrid Perpetual and Climbing Roses, Paeonies, Phlox and Hollyhocks. Mailed on application.

M. H. WALSH, Rose Specialist
WOOD'S HOLE, MASS.

A Quick Way to Set Out Strawberry or Other Plants

WHEN my strawberry plants came at such a time that I could get no help in setting them out, I was puzzled how quickest to do the work alone. Having some six-inch labels, such as can be bought, painted on both sides, at any seed store for fifteen cents per hundred, I used them as follows:

Stretching the garden line to mark the first row, 110 feet long, I went along it with a yardstick, setting the labels at proper distances, eighteen inches apart. When they were set, I moved the line to mark the second row.

Then, with my basket of plants ready, I drove my spade into the ground by the first label, actually touching it and crowding it a little along the row, thus getting the handle of the spade to mark the exact spot where the label stood. Drawing out the label, I set it alongside the garden line. Pulling the spade handle toward me, I set a plant in the deep hole thus opened, spreading the roots out fanlike. I then drew out the spade, drove it into the ground a few inches in advance of the plant, and again pulled the handle toward me, thus closing the hole first opened and crowding the earth against the roots of the plant. After drawing the spade out of the second hole, I filled this by sweeping a little earth into it. Then, after using my fingers to clear the crown bud of earth, I went on to set the second plant.

In this operation the back of the spade was always away from me, and but one hand was used to set the plant in the hole. When I did not feel hurried I drove the spade in three times instead of twice, once behind as well as once in advance of the plant, to make absolutely sure that the earth was well packed around its roots. After a little practice I scarcely needed to use my fingers to clear the crown bud, and was able to average two plants per minute.

Thus, by marking the spot for each plant, first by the labels and then by the handle of the spade, the row was very easily set. When it was finished, the labels stood by the second row, ready to hand when the yardstick was used. With my length of row, a packet of a hundred labels could have been used to set an indefinite number of plants, and I am sure they saved me much time. To mark as you go means delay and exposure of the plants to the sun. A measuring tape interferes with the use of the spade, and no other implement except a special trowel will allow such quick work, for the dibber is not really suitable for setting strawberries, as it leaves the roots crowded together instead of spread out. Marks made in the ground quickly dry out and disappear, but by using the labels I was able to interrupt the work for hours at a stretch and then take it up again without loss of time.

I consider that my labels have easily paid for themselves, and plan to use them in setting out my tomatoes, cabbages and other house-raised plants. For the August setting of potted strawberries they would also be useful, but not of course with the spade.

Massachusetts.

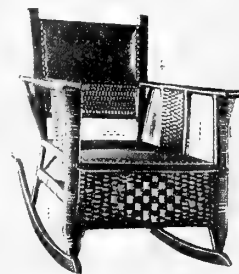
ALLEN FRENCH.

IF your supply of drinking water is to come from a tank, be sure it is made by us of Red Gulf Cypress. Then there will be no chance of contamination.



Erected for Shawomet Water Co., Shawomet Beach, R. I.

W. E. CALDWELL CO.,
LOUISVILLE, KY.



Artistic Furniture

WILLOW and RUSH

This is one of our latest designs, and there are hundreds of others. Send for our book "Fireside and Seaside." Ask your dealer.

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INDIAN PALM BASKET, 25 Cents



Hand-woven from palm fiber by the Indians in the interior of Mexico, 8 inches high, strong, beautifully colored, useful and ornamental. Warranted genuine. Sold in curio stores at \$1.00. We send it prepaid for 25c., to advertise our large collection of Indian goods. Pueblo rugs and Mexican drawn work at low prices. 2 baskets for 44c., large size basket, 50c. Catalogue free with order or for 4c. postage.

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There are several kinds of

Mushroom Spawn

We produce the BEST kind. Uncle Sam's experts say so. If you want fine fresh mushrooms next fall and winter send for our booklet now. Tells all about it.

Pure Culture Spawn Co.
Meramec Highlands, Mo.

12 Mushrooms, 4 lbs., from "Tissue Culture Pure Spawn."

FOR FALL PLANTING

VAUGHAN'S SELECTED BULBS

OUR importations of these bulbs exceed that of any other firm, and are made with special reference to the needs of private places for outdoor and indoor planting and conservatories, as well as for commercial greenhouses and others who desire the most reliable qualities obtainable. The bulbs we offer will, under proper treatment, produce the best flowers that grow. Years of experience have taught us where to go for the best bulbs both as to size and quality of bloom. We can therefore promise our customers nothing but fancy stock.

SOME OF OUR SPECIALTIES WHICH YOU SHOULD PLANT

VAUGHAN'S NETHERLAND'S TOP ROOT HYACINTHS

During the harvesting of the Hyacinth bulbs in Holland it is found that a few varieties produce a limited quantity of what is known as "top roots." These bulbs are of extra large size and will throw magnificent spikes of flowers. The following are a few of the varieties of which we can offer these extra-size bulbs:

Gertrude, dark rose. **Robert Steiger**, crimson. **L'Innocence**, pure white. **Madam Van der Hoop**, bluish white. **Grand Lilas**, light blue. **Grand Maitre**, dark porcelain.

Price of any of these 20cts. each, \$2.00 per dozen, \$15.00 per 100

NARCISSUS OR DAFFODIL

These flowers, so well adapted to the hardy border, are found most useful for planting among hardy perennials and shrubbery, as well as in solid beds and borders. They are equally valuable for growing in pots for house decoration. The following are only part of our list both for growing in the house or naturalizing outdoors:

	Per 100	Per 1,000
Emperor. Large trumpet variety, rich yellow	\$3.00	\$25.00
Empress. Finest of the two-colored trumpet varieties and a fitting companion for Emperor	3.50	30.00
Poeticus. One of the most beautiful of the Narcissus family, pure white flower with golden yellow cup and distinct rim of scarlet, especially adapted for outdoor planting	1.25	10.00
Alba Plena Odorata. Fragrant, snow-white, gardenia-like flowers. One of the hardiest of the Narcissus family	1.25	10.00
Silver Phoenix. Large double flowers, creamy white, shading to primrose	3.00	
Von Sion. Old-fashioned yellow Daffodil	1.75	15.00

VAUGHAN'S SPECIAL TULIP MIXTURES

Of both single and double Tulips. They include only such varieties as will bloom about the same time and of about the same height. The colors are chosen with care, so that they may be depended upon to blend and make a harmonious bed.

	Per 100	Per 1,000	Per 100	Per 1,000
Vaughan's Special Single Mixture	\$1.75	\$15.00	Vaughan's Special Double Mixture	\$2.00 \$16.50

VAUGHAN'S SELECTED TULIPS

Among Dutch growers it is well known that the Tulips supplied to florist growers must be of the very finest quality, as otherwise they will not withstand the severe "forcing" process to which they are subjected. Our orders call for nothing but this forcing grade of Tulip bulbs, and this fact should be borne in mind by you when comparing prices. The following are a few of the best known varieties suitable for growing in pots and in beds or masses.

	Per 100	Per 1,000
Artus , Brilliant scarlet, large flowers	\$1.35	\$12.00
Belle Alliance , Scarlet, yellow base, choice	2.25	20.00
Chrysolora , Bright yellow, fine for pots or bedding	1.25	10.00
Cottage Maid , White-edged rose	1.15	9.00
Joost von Vondel , Cherry red, feathered white	1.65	14.00
Keizerskroon , Rich crimson with gold band	2.00	16.00
Queen Victoria , White shades rose	1.15	9.00
Yellow Prince , Pure yellow, one of the best	1.15	9.00

LILIUM CANDIDUM, THE FINEST HARDY LILY THAT GROWS

Madonna, or Annunciation Lily

This is one of the oldest, loveliest and best-known Lilies. The flowers, of which there are three to twenty on each stem, are snow-white, with heavy yellow stamens and of the most delightful fragrance. It is hardy, and will thrive in any ordinary garden soil, preferring a position where it can get plenty of light and air. Blooms in the open ground about June 20.

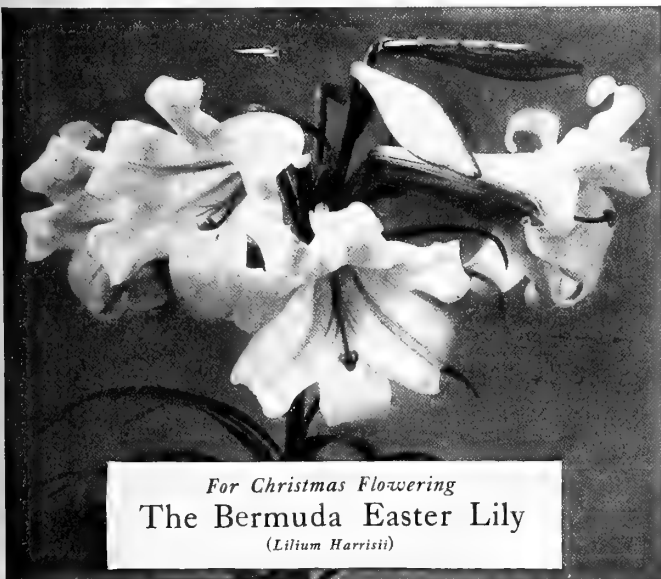
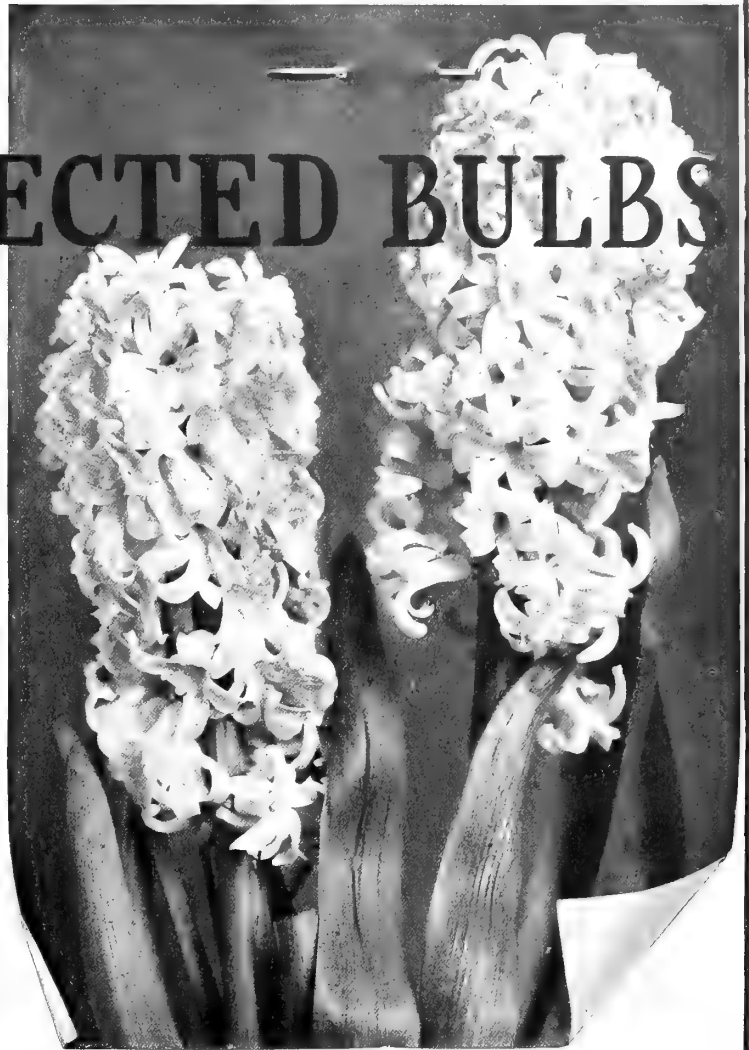
- Selected Bulbs**, 85 cents per dozen, \$1.75 for 25, \$6.50 per 100.
- Mammoth Bulbs**, 20 cents each, 50 cents for 3, \$1.50 per dozen, \$10.00 per 100.
- "Jumbo" Bulbs**, 50 cents each, \$5.00 per dozen.

FOR CHRISTMAS FLOWERING, THE BERMUDA EASTER LILY

(Lilium Harrisii)

This mammoth white Trumpet Lily, with flowers 4 to 5 inches long, is preëminently the best of all lilies for winter forcing and flowering. If planted indoors now will give exquisite flowers of delightful fragrance for Christmas. Our importations this season will amount to nearly half a million bulbs, and is exceptionally fine.

- First Size Bulbs**, which should produce from 5 to 8 flowers. 75 cents per dozen, \$5.50 per 100.
- Extra Size Bulbs**, which should produce from 8 to 15 flowers. \$1.80 per dozen, \$3.50 for 25, \$12.00 per 100.
- Mammoth Bulbs**, which should produce up to 20 flowers on a stalk. 30 cents each, \$3.00 per dozen.
- "Jumbo" Bulbs**, supply very limited. 75 cents each, \$8.00 per dozen.



For Christmas Flowering
The Bermuda Easter Lily
 (Lilium Harrisii)

Write for a copy of our Fall Bulb Catalog, mailed free

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Part of grounds of Mr. Otto Jaeger, Prospect Avenue, Montclair, N. J., decorated with my specimen stock of extra size.

Japanese Trees and Evergreens

of tested hardiness, in sizes for immediate ornamentation. Catalogue and illustrated booklet, showing grounds planted with them, sent free on request.

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Telephone, 506 W. Orange.



An Interesting White and Yellow Iris

KERNER'S oriental iris (*Iris orientalis*) is one of the most distinct and striking irises of early and middle June. It is a robust plant with broad leaves and flowering stems about four feet long. The flowers have pure white standards and falls, with bright yellow marking on the hafts.

I. Sibirica, var. *orientalis*, is grown in many gardens as *I. orientalis*, but the plant here figured is properly so named. It is *Iris ochroleuca* of Linnæus. It belongs to the spuria group of the botanist, other good examples of which are *I. aurea*, a golden-yellow form, and *I. Monnierii*, of a lighter yellow.

Iris spuria, var. *notha*, I have seen grown under the nursery name of *I. ochroleuca*. It is



218. Kerner's variety of the oriental iris (*Iris orientalis*, var. *Kerneriana*). It is a dwarf form of a species which ordinarily grows four feet high, and has white and yellow flowers

a robust form of the type, and with individually rather pleasing light lavender flowers, but not as effective in the garden as *I. orientalis*.

The plant figured here is an Asia Minor form, known to foreign catalogues as *I. Kerneriana*. It is, however, in every respect like the type, except in being smaller in its parts. This is one of those fanciful distinctions which delights the botanist and wearies the gardener with another name.

New Jersey.

J. N. GERARD.



A Wild Garden

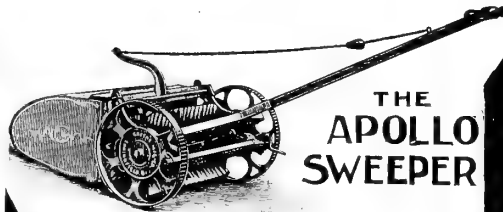
With charming wild Ferns, Orchids, Arbutus, Trilliums and the wild flowers of woodland and meadow will bring rare delight to your grounds.

AUTUMN

is a good time to put them out. A large part of my nursery is given over to the growing of the best ferns, orchids and wild flowers taken from nature, best suited for cultivation. Grown in cold New England they are perfectly hardy. I have made a dainty little booklet of 50 pages entitled "Gillett's Hardy Ferns and Flowers," containing descriptions and directions for cultivation which will interest you. It also tells something of hardy perennials for the old-fashioned flower garden. It will be gladly sent to you on request.

EDW. GILLETT

Southwick Nurseries SOUTHWICK, MASS.



THE APOLLO SWEEPER

UNSIGHTLY LAWNS

can be made beautiful by using an "Apollo" lawn sweeper. It is the ideal machine for sweeping Lawns, Porches, Sidewalks, Pavements, Barn Floors, Factories, Warehouses, etc.

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can be gathered more quickly, easily and thoroughly, and in less time, with the "Apollo" Sweeper than with rake and basket, or by any other method. They will come in very handy for covering flower beds, tender roots, etc. Used as bedding for horses and stock they will soon save you more than the cost of the Sweeper.

If your dealer can't supply you, write us, and we will ship an "APOLLO" Sweeper

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Our booklet, illustrating and describing the various sizes we manufacture, FREE.

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First-class canvassers wanted.



The Glen Steel Folding Mat

Prevents Anyone Tracking Mud or Snow Into the House.

One scrape of the foot in any direction across a Glen Steel Mat takes off all those balls of mud and snow which cling so tenaciously and resist all the ordinary mats. The Glen Mat is neat and attractive, is easily cleaned, does not curl up. Its wonderful construction and flexibility will make it wear a lifetime. Unexcelled for residences and entrances to all public and private buildings. All first class dealers handle the Glen, if yours don't, write today for catalog and particulars. We make bar and soda-fountain mats on same principle.

Glen Mfg. Co., 149 Mill St., Ellwood City, Pa.

Also Mfrs. Hartman Steel Picket Fence, Hartman Flexible Wire Mats and Hartman Stockade Woven Wire Fence.

Thorburn's Bulbs

For Fall Planting

Our Descriptive Catalogue is now ready and will be mailed free on application. It is beautifully illustrated and contains full cultural directions and a most complete collection of all the newest and best sorts.

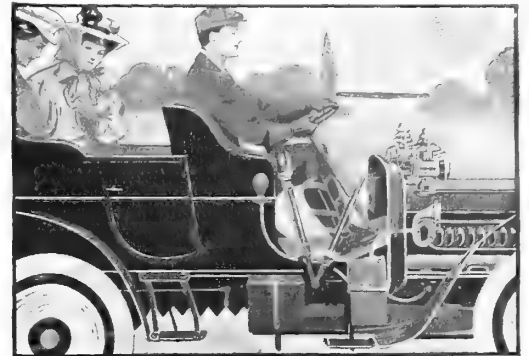
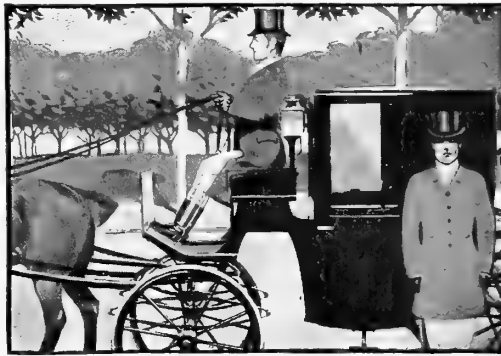
Hyacinths Tulips Lilies
Daffodils

Irises including a magnificent collection of the newest and most beautiful varieties of the Japanese Iris.

Crocuses Freesias
Lily-of-the-Valley, Etc.

Send for our catalogue. We are the largest and oldest bulb importers in America

J. M. THORBURN & CO.
36 Cortland Street, New York
ESTABLISHED 1802



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TO the gentleman who in the equipment of his stable takes the same pride as he does in the appointments of his house, we respectfully suggest the completeness of the stocks carried by our many repositories and agencies. In these warerooms may be found every type of conveyance suitable for use during residence in town and country, with the correct harness for each. Details, such as whips, robes, monograms, crests, foot-warmers, carriage clocks, hampers, etc., receive our precise attention,

while an expert knowledge of the requirements of horses is displayed in our extensive lines of stable requisites.

THE ability to give solid satisfaction day after day on the road is, after all, the quality which most owners appreciate in the car they run, rather than the capacity for occasional phenomenal spurts of speed. While the "STUDEBAKER" cars have all the speed which will ever be required for touring, it is their common-sense construction, their reliable ignition and lubrication systems and their ease and convenience of operation which have made them popular this season. Above all —STUDEBAKER standard of materials and workmanship throughout.

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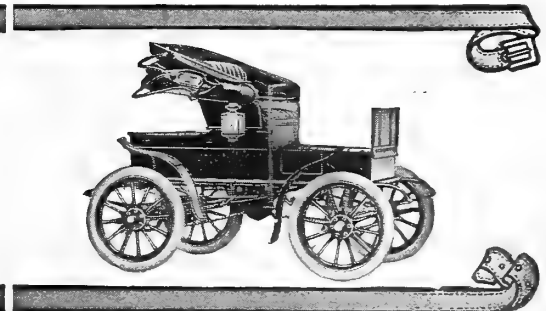
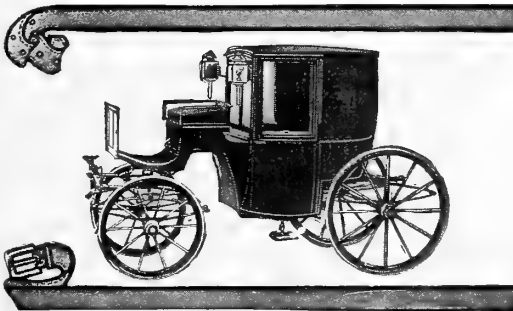
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STUDEBAKER 2 & 4 CYLINDER CARS

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IS THE BEST FINISH MADE FOR FLOORS,
INTERIOR WOODWORK AND FURNITURE

Not Brittle, will neither scratch nor deface like Shellac or Varnish. Is not soft and sticky like beeswax. Perfectly transparent, preserving the natural color and beauty of the wood. Without doubt the most economical and satisfactory POLISH known for HARDWOOD FLOORS. Send for Free Booklet telling of the many advantages of

BUTCHER'S BOSTON POLISH

Our No. 3 Reviver is a Superior Finish for Kitchen and Piazza Floors. For sale by Dealers in Paints, Hardware, and House Furnishing Stores.

THE BUTCHER POLISH COMPANY
356 ATLANTIC AVENUE - - BOSTON, MASSACHUSETTS

Fall Planting

Before ordering your stock look at our offer and send for our FALL list. You will find

Good Stock and Reasonable Prices

We name a few

HYACINTHS , for glasses in the house or planting outdoors			
Extra large bulbs, named sorts in separate colors, white, rose, red, blue or yellow	Each	Per doz.	Per 100
First size bulbs in separate colors	10c.	\$1.50	\$10.00
	7c.	75c.	5.00
		Per doz.	Per 100
TULIPS , single or double, in separate colors, white, rose, yellow, striped, red, etc.	25c.	\$1.25	\$10.00
	20c.	1.00	8.00
Mixed NARCISSUS Varieties , for Xmas forcing	Each	Per doz.	Per 100
Chinese Sacred, force beautifully in water	10c.	\$1.00	\$6.00
TRUMPETS , Large golden yellow			
Empress, Emperor	5c.	50c.	3.00
Trumpet Major	3c.	30c.	2.00
	Per doz.	Per 100	Per 1,000
CROCUS , in separate colors, white, yellow, blue, purple and striped	6c.	40c.	\$3.00

All other kinds of winter and spring flowering bulbs. SEND FOR OUR PRICE LIST

Are you interested in the beautiful

FLORA of Japan

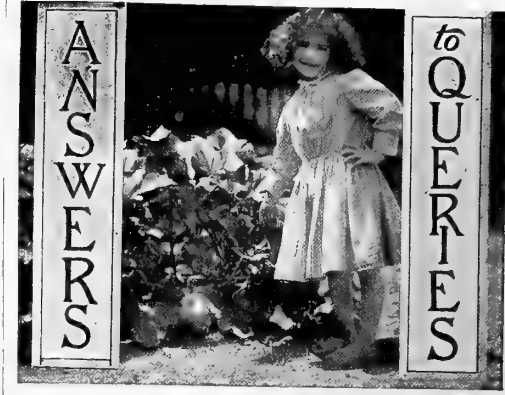
We are the OLDEST Import House from Japan in the U. S. (Established 1878), and can tell you all about the flowers, trees and shrubs growing in Japan. We can furnish

**IRIS KAEMPFERI PAEONIAS, HERBACEOUS and TREE SORTS
ALL SORTS MAPLES FLOWERING SHRUBS
ALL LILY BULBS GROWING IN JAPAN
ALL HARDY**

Send for our Price List and Catalogue before buying or ordering elsewhere.

NOTICE—Our "SUPERB DOLLAR COLLECTION" offered in September number holds good for OCTOBER.

H. H. BERGER & CO., 47 BARCLAY ST., NEW YORK CITY



To Vanquish Catalpa Worms

Q. How can we get rid of the worms on catalpa? They are about two inches long, striped black and yellow, and they ruin the foliage. Last year we tried bisulphide of carbon, which was effective early in the season, but did not prevent the worms from coming later.

A. The worm on the catalpa trees is undoubtedly what is known as the catalpa sphinx, a Southern species which produces three or four generations annually and is remarkable among its allies because of its depositing numerous eggs in large masses on the under side of the foliage. The larvæ are gregarious when young, and on account of their voracious appetites rapidly defoliate infested trees. This species is also more or less local in habit. It, like other leaf feeders, can be readily controlled by thorough spraying with an arsenical poison, and in this case there is nothing better than an arsenate of lead in the prepared paste form, using the amounts recommended by the manufacturer. A thorough application at the time the first brood of larvæ appear, which is about the middle of June, should protect the trees throughout the season.

The poison recommended above is much better for this purpose than the more commonly employed London purple or Paris green, since it adheres to the foliage for a long time and protects the trees from attack during the remainder of the season, something of considerable importance when brood follows brood. The nearly full-grown caterpillars can also be dislodged from the trees by sudden jarring. This would have to be supplemented by collecting and destroying the pests, or else putting some bands around the trees so that they could not ascend and continue their destructive work. Ordinarily the arsenical spray is much to be preferred.

E. P. FELT,
New York State Entomologist.

RECEIPTS FOR GRAFTING WAX

Q. After reading Professor Fletcher's articles I want to try my hand at grafting. There are some wild plums and cherries on my place that might as well be working at something better. How do you make grafting wax?

A. R. L.

A. One of the best formulas is: Resin, four parts by weight; beeswax, two parts; tallow one part. Melt together and pour into a pail of cold water. Then grease the hands and pull the wax until it is nearly white.

Narcissus or Daffodils

LARGE SELECTED BULBS AT ATTRACTIVE PRICES

If these bulbs are planted outside in October, they bloom profusely in Spring and will multiply rapidly.

SINGLE VARIETIES	DOUBLE VARIETIES
	PER DOZ. 100
Princes, yellow . . . \$0.25	Van Sion, yellow . . . \$0.30
Trumpet Major, yellow . . . 30	Incomparabilis, yellow . . . 25
Golden Spur, yellow, large . . . 50	Orange Phoenix, Yellow and white . . . 35
Poeticus, white . . . 20	Alba Plena Odorata, white . . . 25
	PER DOZ. 100
	Van Sion, yellow . . . \$2.00
	Incomparabilis, yellow . . . 1.25
	Orange Phoenix, Yellow and white . . . 2.25
	Alba Plena Odorata, white . . . 1.50

Write for FREE ILLUSTRATED Catalogue of Tulips, Hyacinths, Crocuses, Snowdrops and other bulbs

W. E. MARSHALL & CO., 146 W. 23rd Street, New York



Border of Deutzias planted along a drive on a private estate near Boston. We have an especially fine stock

SPECIALITIES for FALL PLANTING

We offer for Fall of 1905 an unusually large and well-grown stock of

FRUIT TREES

for ORCHARD and GARDEN, embracing varieties best adapted to various soils and climates.

ORNAMENTAL TREES, SHRUBS, ETC.

Consisting of rare and beautiful species and varieties for the embellishment of public and private grounds; Shade Trees, Street Trees and Flowering Shrubs, including Lemoine's marvelous New Double Lilacs, Deutzias, Mock Orange, etc.

THE ROSE

is a specialty with us and we have a larger supply this year than ever. Our assortments embrace all of the old favorites as well as the newest kinds from the most celebrated raisers in Europe. Our novelties comprise introductions of rare beauty and excellence.

PEONIES AND PHLOXES

Of these showy, beautiful, hardy, easily grown plants, we offer the choicest kinds, also HARDY PLANTS, including the most ornamental, flowering from early spring till late autumn, particular attention being given to Iris, Japan and German. Our Beautifully illustrated Descriptive Catalogue—144 pages—a manual indispensable to Planters, also Descriptive List of Novelties and Specialties for Fall, 1905, together with a colored plate of Hardy Phlox, mailed free on request.

ELLWANGER & BARRY

NURSERYMEN-HORTICULTURISTS

Mount Hope Nurseries, Drawer C

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Four Departments

AT YOUR SERVICE

IRISH ROSES

The best in the World

Your order entrusted to us will be properly cared for, shipping plants of each kind at a date when they may be

SPECIMEN TREES and SHRUBS

transplanted in perfect safety and with best results.

Peonies, Phlox, Iris and a few other hardy perennials in September and early October; Daffodils, Tulips, and other bulbs in October; some Roses, Trees, Shrubs, Vines and Fruit Trees, October and November, some in April, others in May.

Our wide experience in planting in many parts of the country is at your service.

We attribute our success as much to the time of planting as to the condition of our stock.

LANDSCAPE DESIGN

Our trade has annually doubled over the preceding year since 1901. *Catalogue free.*

S. G. HARRIS, M. S.
TARRYTOWN, N. Y.

BULBS and HARDY PLANTS

For Fall Planting

We offer practically all the best new and old varieties of Fruit and Ornamental Trees, including a splendid collection of Evergreens, Shrubs, Vines, Hardy Roses, Herbaceous Plants, etc.

Send us your list of probable wants for special quotations, and ask for our complete catalogue

The great care we take in the grading and packing of all orders is certain to meet with the complete approval of all who receive shipments from us. It costs us more to do this way, but we want to make permanent customers of those who favor us with a trial order.

The Elm City Nursery Co.
New Haven, Connecticut



Home Grown Lilies

Why buy elsewhere, when Horsford's Bulbs, grown in cold Vermont, will produce on a single stem of Auratum Lilies a bouquet like this. Not all of Horsford's Bulbs are as good as this one, but they are known to be better than the average by those who have used them. Autumn Supplement, ready last of August, will offer a long list of lilies, and other bulbs and plants, trees and shrubs, for autumn setting. An attractive Bargain List for those who have room to plant liberally. Many plants, especially shrubs and trees, ripen off their wood much earlier in this cold climate than farther south, and are ready to set earlier in the fall. You should ask for Horsford's Catalogue and Supplement before buying. To all who received spring catalogue of 1905, the Supplement will be sent when issued.

FREDERICK H. HORSFORD, Charlotte, Vermont




True Art
Art and Photography blended in exquisite effects. No. 400, "A Typical Maine Road." 5 x 7. \$1.00, postpaid. Satisfaction guaranteed.

Lamson Nature Prints

True to Nature
With all the changing hues of each season. No. 357, "Afternoon Off Peak's Island." Postpaid, \$1.00. Send 10c. for our Art Catalogue.

LAMSON STUDIO,
86 Temple Street,
Portland, Me.





GLADIOLI

Order now for November shipment

\$5.00 WILL PAY FOR

100 Bulbs of the Willow Bank Collection
12 Bulbs of the Golden Collection
12 Bulbs of the Silver Collection
12 Bulbs of the Diamond Collection

consisting of twelve Gladioli of all the colors of the rainbow, including the empress of them all "Virginia" the most rare and beautiful of this flower. On all orders received prior to November 15th I will ship 156 bulbs of the above varieties, charges prepaid, on receipt of \$5.00. Having sold all my stock unplanted, I will be unable to ship on further orders until the harvesting of this season's planting. Order now for next season's wants and secure the choicest selections.

STEPHEN FISH SHERMAN
Proprietor Willow Bank Nurseries, Newark, Wayne County, New York

Another is: Six pounds of beeswax and one pint of linseed oil; apply hot with a brush.
A liquid wash is made with white resin, one pound; beef tallow, one ounce; remove from the fire and add eight ounces of alcohol. Keep in closed bottles or cans.

Bailey's Horticulturist's "Rule Book" tells such things and the "Cyclopedia of American Horticulture" is a mine of practical information.

HOW MUCH NITRATE FOR SHRUBS

Q. I read Mr. Walsh's article and would like to know how much nitrate I could safely apply around shrubs. Would a quart be too much?

F. N. B.

Hinsdale, Ill.

A. Better not use more than three pounds to the square rod. It should be applied only during the growing season. In the case of shrub, apply just after the flowering period. Scatter it on the surface and rake in. Use one pound three times rather than three pounds once.

L. B.

FERTILIZING SHALE SOIL

Q. How shall I fertilize my garden, the soil of which is mostly shale? I have too many plants to take them all up and remake the beds and borders.

F. B. S.

New Brunswick, N. J.

A. I should recommend that stable manure, if available, be liberally used and thoroughly incorporated with the soil. Then apply broadcast, at the rate of three pounds per square rod, the following mixture:

Ground bone..... 70 lbs.
Muriate of Potash..... 30 "

The manure will supply the organic matter and available nitrogen which are liable to be deficient in our shale soils, while the mixture of bone and potash will supply the needed mineral elements in good forms.

EDWARD B. VOORHEES,
New Jersey Experiment Station.

How to Keep Cut Flowers

FIFTY DOLLARS IN PRIZES

UNDER the auspices of the "Garden Club of Philadelphia" a competition for three prizes of \$25, \$15 and \$10 each, subject to the following conditions, is open to readers of this magazine:

The object of this competition is the ascertaining of the most successful method of keeping cut flowers fresh, in private houses, sent from the greenhouse during the winter months—this competition being only for amateurs.

The tests will be made simultaneously upon the same kind of cut flowers, supplied by the same florist.

RULES

1st. All communications entered for competition should be written on one side of the paper only, and to consist of not more than three hundred words.

2d. Papers must be sent to the secretary of the Garden Club of Philadelphia, Rydal, Pa., before February 1, 1906.



Pearline

First and Best Aid
to WOMEN who MUST do
Washing and Cleaning



☞ Lamps, Lanterns and Lighting Fixtures; Gates, Grilles, Fences; Fire-place Furnishings and other Work in Metal—all wrought by hand.

☞ Illustrated matter will be promptly mailed upon request. Mention the things in which you are most interested.

ELECTRIC LANTERN
No. 10612
EACH, \$6.00
PAIR, 11.50

THE WILLIAM BAYLEY CO.
116 NORTH STREET, SPRINGFIELD, O.

Iron Railings, Wire Fences, Entrance Gates



WE MAKE and erect Iron and Wire Fences of all kinds for lawns, gardens, stock paddocks, dog kennels, Arhors for vines and fruit trees, Garden Arches, Plant Supporters, Tree Guards, Unclimbable Netting Fences, etc., also Wrought Iron Railings and Gates of all kinds for country places. Write for catalogue No. 29.

ANCHOR POST IRON WORKS
Office and Show Rooms:
15 CORTLANDT ST., NEW YORK CITY

Why Not Sow Sweet Peas Before October 1st?

SWEET peas sown in the early spring usually commence to bloom early in June. To have sweet peas early in May, or even in April, they must be sown in the fall.

DIRECTIONS FOR FALL SOWING

Sow between September 25th and October 1st. Select a dry situation and deep, rich soil. Plant from four to five inches deep, and sow thickly. Give level culture. As a fertilizer for fall sowing I prefer a liberal quantity of bone meal to barnyard manure, as the ground mice like to make their nests in the manure, and there is also considerable loss from leaching in the winter.

As soon as the frost is about six inches in the ground, cover lightly with salt hay or some other coarse material. Too much covering is detrimental to the young plants, and also makes a harbor for ground mice and moles. To shelter the row from the cutting north winds, use a 10-inch board set edge-wise alongside the row.

The frost will not hurt sweet peas; it is the thawing and freezing in the spring which is



219. Fall sown sweet peas flower earlier in the spring than spring sown. A succession can be arranged by leaving space for a spring sown row behind the fall sown. For early flowers sow in cold-frames in late September

harmful, therefore a little more covering should be added in March to prevent the ground from thawing until the fine weather sets in. When the frost is out of the ground thin out the seedlings to five inches apart in the row. They will sprout out very freely and will make an immense growth. The wire trellis or brush support should be at least five feet high.

SOWING IN COLD FRAMES

Sweet peas can also be grown in cold-frames, and will give flowers of a size and brightness that will surprise you if you have never tried this method. Sow, as previously directed, two rows lengthwise in a frame 3x6 feet. Keep the frame uncovered until the ground is frozen about six inches deep, then put on the sash, and a hotbed mat or some



Which Tool?

Something to mend or make—which Tool will do it? Open the Keen Kutter Tool Cabinet and lay your hand on the right tool in a second. It's a great thing to have such a tool cabinet in the home.

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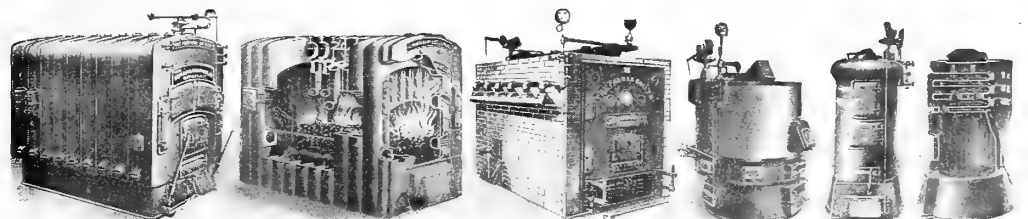
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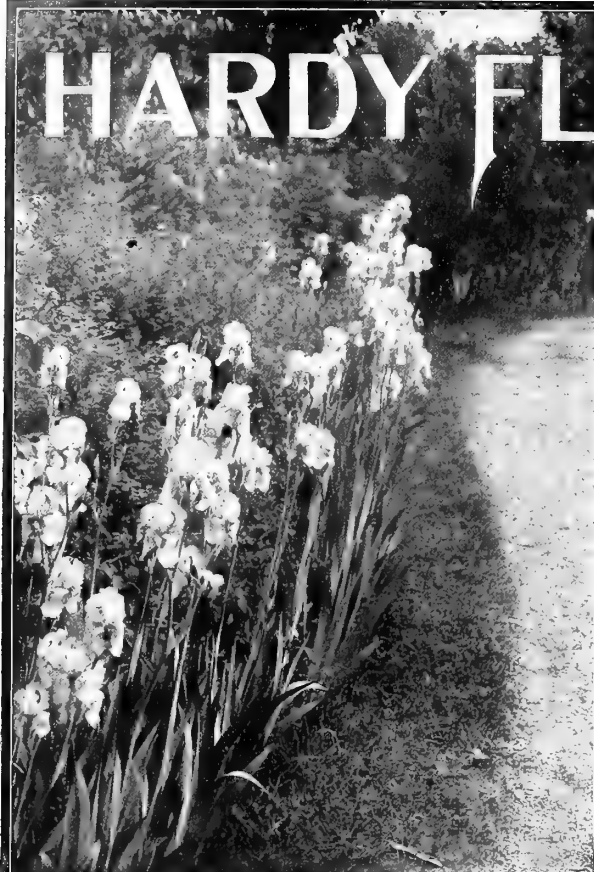


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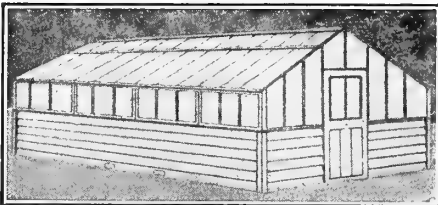
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shows in NATURAL COLORS and accurately describes 216 varieties of fruit. Send for our liberal terms of distribution to planters.—Stark Bro's, Louisiana, Mo.

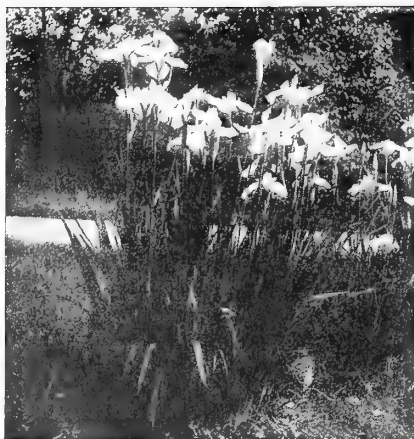
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IS READY

Also new cheap price list of Evergreens, Deciduous Trees and Shrubs. Tables giving the botanical and common names of the best herbaceous plants, height, color and season of bloom, will assist you in making your garden. Both sent for the asking. There is still time to plan the home grounds for Fall planting. All inquiries cheerfully answered.

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THE BAY STATE NURSERIES



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The BAY STATE NURSERIES

W. H. WYMAN
NORTH ABINGTON, MASSACHUSETTS

other light covering. The ground must not thaw until early spring. This can be easily accomplished by keeping the frame covered.

The middle of March the frames should be uncovered on bright days. Once the ground has thawed it must not be allowed to freeze again. Coldframe-grown sweet peas should be in bloom at least two weeks earlier than those sown outdoors in the fall. The dates given are for the latitude of northern New Jersey; further north the seed should be sown earlier, and further south later. The aim is not to have the young plants too strong before the frost sets in, but they must be well above ground before being covered.

The plants stand the winter best when they are from five to six inches high.

SOME GOOD VARIETIES

The following varieties have given me the best results from fall sowing:

Mont Blanc, the earliest white, will grow about three and a half feet high, fall sown.

Emily Henderson, pure white, grows five to six feet high; large flowers; excellent for fall sowing.

Josephine White is another good white for fall sowing, and very early. Has longer stems but not such well-formed flowers as Mont Blanc. Sadie Burpee, very large white; the black-seeded form of this has a faint pink tinge but is more hardy than the pure white, white-seeded form.

Queen Victoria, primrose yellow, faintly overlaid with purple.

Earliest-of-all, pink and white.

Navy blue, dark blue.

Anyone who wishes to try any other varieties should select those having black seeds, most of which can be successfully grown from fall sowing.
N. BUTTERBACH.

How to Attract Wild Ducks to Your Neighborhood

WILD rice, the favorite food of wild ducks, is a plant worth growing for its beauty alone. One seedsman I know of has had it in his catalogue for many years, under the name of *Zizania aquatica*, but the secret of its cultivation has only lately been discovered. The seeds must be sown in the fall, and they must never be allowed to become thoroughly dried out. This explains why sportsmen's clubs have always failed in their efforts to grow wild rice near their club-houses. Hitherto they have always bought the seed in the spring, as was natural, and hundreds of dollars have been wasted.

Another peculiarity of wild rice is that it will grow only in fresh water. Even 3 per cent. of salt is too much, and that is so little that you can just detect a brackish taste.

Buy ten cents' worth of seed this fall and scatter in on the bit of fresh water nearest your home, whether you own the stream or not. No one will harm the wild rice, and next year your heart will leap with joy to see the beautiful wild rice in flower, and when it goes to seed you will enjoy seeing the other birds feeding on its swaying stems, even if you do not raise enough plants the first year to attract wild ducks.



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hold 100 to 150 feet of line, take small space, quickly removed when not in use. Make a neat and tasty appearance, last a life-time.

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made of galvanized wire, to take the place of the old-fashioned insect-harboring, decaying, wooden supports. It means not only economy to private or market growers, but superior quality, greater quantity.

READY FOR DELIVERY: ORDER NOW.

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The **IGOE TOMATO AND LARGE PLANT SUPPORTS** mean a more abundant crop of Tomatoes of superior quality, and more beauty and success of your heavily flowered plants, such as Peonies, Dahlias, Golden Glow, Chrysanthemums, etc. Same style as Carnation

Supports, but larger. \$1.75 per dozen. \$12.50 per 100.

IGOE BROTHERS, 228 North 9th Street, Brooklyn, N. Y.

Making Beds for Mushrooms at Christmas

THE most favorable season for starting mushroom beds is when the cold nights of fall arrive. Begin preparing the soil in the latter part of September, making up the bed in the middle of October, which will insure a crop in full bearing by Christmas and lasting until March, and often longer. But beds may be made up at any time, provided a good supply of fresh manure is available and there is plenty of cellar room.

Any cellar that is dry, frost proof and capable of being aired may be utilized with satisfactory results, but the preparation of the fermenting material must be accomplished in an airy outbuilding that any fumes may pass off.

THE BEST MATERIAL

The best material for the bed is good fresh horse droppings, free from coarse litter, which should be got together as quickly as possible, so that a sufficient quantity may be in the proper condition to make up a bed. Get manure from healthy horses that are fed grain freely. The manure should be turned over every second day, to allow of the proper airing and to enable it to dry, so that when squeezed no moisture is expressed. This may take eight to ten days, if the weather be not damp.

If it is difficult to dry the manure (as often happens in wet or cold weather), add dry loam to the extent of about one-fourth. Should the turning be neglected, or the manure be heaped too high while in preparation, heat will be generated that will cause the compost to burn, which is shown by its turning white.

TEMPERATURE

When enough material is ready, make up the bed in a cellar for early winter crops. A minimum temperature of 50° is the best, and a bed in such a place should give results all through the winter. A nuisance of these early beds will be a plentiful crop of flies.

Given a good dry cellar bottom, a 10-inch board or plank set on edge, and we are ready for the manure. This must be spread in thin layers and thoroughly trodden. Each layer as it is laid on must be packed as hard as possible, to prevent the material from heating too violently and so injuring the spawn. When sufficient material is added to make the required depth, ten inches in front, sloping upward to twelve inches at the back, a thermometer may be plunged and made firm, to register accurately the temperature as it rises.

WHEN TO SPAWN

In a general way it may be taken as safe to spawn when the heat does not rise above 95°; should it go above 100°, water must be given to cool the bed, or it may even be necessary to take out the bed, and after letting the manure sweat for a few hours, say a day and a night, make up the bed again.

Assuming that the conditions are favorable after a week's waiting, the spawn may be broken up into pieces about the size of a large

PROTECTION FROM FIRE



NEW MODEL AUTOMATIC FIRE ESCAPE makes a firm, strong, steel ladder, that two persons may descend abreast at one time. An entire family of 15 persons may use it at once, as each section is tested up to 2,000 pounds weight. For country homes of two, three, or four stories it is ideal. Constructed of two or three strands of steel wire in the strongest, simplest manner it affords a rigidity and sense of security when in use that has hitherto been unknown to portable fire escapes. It is unbreakable, unburnable and will never wear out.

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FOR

Gardeners, Farmers and Estate Superintendents
 I am constantly receiving applications from trustworthy and competent men desiring positions. Twenty years acquaintance among them has given me exceptional knowledge of their individual capabilities. **No Fee**—My sole desire is to be of service to employer and employee alike. **ARTHUR T. BODDINGTON**, Seedsman, 342 West 14th Street, New York.

hen's egg; holes dug into the manure eight inches apart, just deep enough to bury the spawn; the bed smoothed again with the back of a spade. Put on a finishing coat of loam, if it is desired.

SPAWNING AND CASING AT ONE TIME

If the temperatures are regular, not fluctuating or rising unduly, one can safely spawn and case the bed over the same day. This casing means the coat of loam through which the mushrooms finally appear. It is best to use fresh loam, as it is taken from the field; if it has been stacked to kill the sod all the better, but no foreign matter should have been mixed in. A layer one inch in thickness should be spread evenly all over the bed and primed smooth with the spade.

Water will not be necessary for a week or two at least, and, on general principles, the less the better until the crop begins to show, which should be in about four weeks if the pure culture spawn is used; with the imported article it sometimes takes very much longer.

THE KINDS OF SPAWN

Of the several sorts of spawn that are on the market, what is called English spawn is the most commonly known, and is the kind that comes in bricks. The French spawn is a loose, flaky material, and is different from the English spawn only in not being pressed into compact bricks. The English spawn is more easy to handle, and is therefore more commonly used. The pure culture spawn, which has only recently been manufactured commercially, as a result of the investigations of the Department of Agriculture, also comes in bricks, and gives large mushrooms. It is offered in three named varieties, which are chiefly distinguished by their size. It starts into growth more quickly than the old-style spawn, and has given me complete satisfaction.

The temperature of the beds should be maintained by the natural heat of the manure, up to 70°, if possible, until the mycelium has permeated the whole mass. Should the heat decline, apply some covering, say four or six inches of hay, to bring up the warmth. After a little experience, the heat may be regulated very nicely by the amount of covering used.

If the surface of the bed does become dry, apply tepid water at once, moistening the dry spots well, but not soaking the bed as with a hose. Do not use water having any iron in it.

When gathering, twist the specimen out of the soil, never cut it and leave the stem in the bed to decay.

SECURING A SECOND CROP

After a crop has been gathered, let the bed dry for a time, then water thoroughly with a little nitrate of soda added—a heaping teaspoonful to five gallons of water—and a good sprinkling of mushrooms will appear in due time.

The compost from a spent bed makes an excellent ingredient for the mixing in the potting soil for small plants, such as **annuals**, when being transplanted.

Massachusetts.

E. O. ORPET.

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A FRUIT ORCHARD FOR \$12.50

LOOKING at it from the standpoint of either pleasure or profit, is there anything that surpasses an orchard? When the pleasure of it only is considered, you have early in the spring a gorgeous burst of blossoms, in midsummer the ripening fruit, in the late summer luscious home-grown fruit, and enough over, if you have a part laid out in apples, to store and enjoy the winter through.

If the orchard is looked at and desired merely for profit, the results are even more interesting. For example, one of our customers netted this season \$14 from one four-year-old Elberta Peach Tree. An acre, at this rate, would yield a profit of \$1,400! Another netted \$8 from one ten-year-old Yellow Transparent Apple Tree. Another \$6 from one four-year-old Abundance Plum Tree. Still another customer wrote us that a single Bartlett Pear Tree gave him a profit of \$10.

It is not necessary to go into this thing in a large way, and we make the planting of a small orchard a matter of trifling expense. This is possible because we are one of the largest growers of fruit trees in America, having more than a thousand acres in our nurseries, and sell to the large orchardists of the country in car-load lots. We frequently sell for single orchards from fifty to one hundred thou-



Isn't it worth while to get a yield like this every year? You can plant a hundred trees for fifteen dollars

sand trees. We make these special offers:

- FOR A ONE-ACRE PEACH AND APPLE ORCHARD
 - 50 Elberta Peach Trees, fine one-year-old stock } \$12.50
 - 50 Yellow Transparent or Baldwin Apple Trees
- FOR A ONE-ACRE PEAR AND APPLE ORCHARD
 - 50 Bartlett Pear Trees } 17.50
 - 50 Yellow Transparent or Baldwin Apple Trees
- FOR A ONE-ACRE APPLE ORCHARD
 - 100 Yellow Transparent or Baldwin Apple Trees . . . 15.00
- FOR A ONE-ACRE PLUM AND PEACH ORCHARD
 - 50 Elberta Peach Trees } 15.00
 - 50 Abundance Plum Trees
- FOR A ONE-ACRE CHERRY AND APPLE ORCHARD
 - 50 Early Richmond Cherry Trees } 20.00
 - 50 Yellow Transparent or Baldwin Apple Trees

Any other varieties of the fruits included in these combinations may be substituted for those listed. Those mentioned, however, are the most popular varieties among the orchardists, who naturally select the best for yield and quality.

The trees in these offers are all fine stock, and are just what we supply to the commercial orchardist. This stock is grown in the rich Maryland soil, and is perfectly hardy in severe Northern climates.

Lay out some of your unused land in orchard. It requires but a little attention and will yield you large dividends in pleasure and profit. We shall be glad to advise any reader of THE GARDEN MAGAZINE relative to the planting of an orchard, whether large or small, and suggest other combinations than those offered above. Write us today.

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At dozen and single prices we prepay mail or express charges. Hundred lots by express not prepaid.

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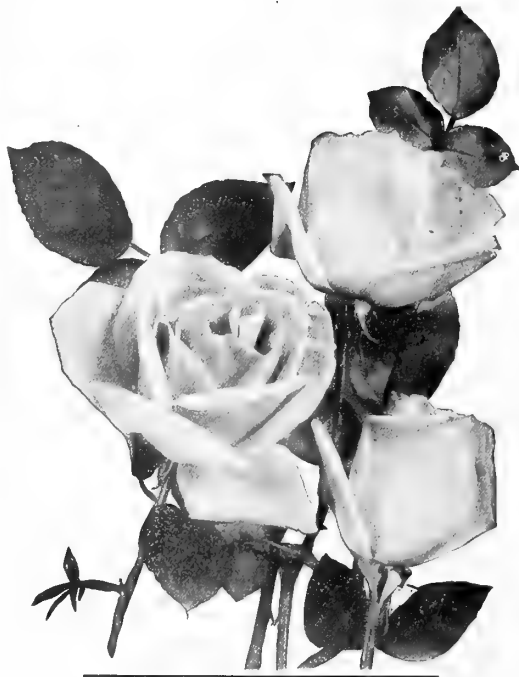
The above picture shows the manner and conditions under which bulbs are grown in Holland. We are in direct connection with the largest growers of bulbs in Holland; our importations are for the large bulbs and best quality; are not to be compared with the bulbs which can be offered at a much less price.

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- BULBS for outdoor planting
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- NEW VARIETIES
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Killarney

is unmatched, it is a "living" pink that under artificial light assumes an intensity that fairly glows. Killarney is everblooming, flowering profusely from June until November.

Strong two-year-old plants, \$9.00 per doz. Strong one-year-old plants, \$6.00 per doz. Special prices on larger quantities.

THE TWELVE BEST HARDY GARDEN ROSES

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|--|--|--|
| Killarney, glowing light pink | Frau Karl Druschki, largest pure white | Mrs. Sharman - Crawford, silvery pink, shaded rose |
| Alfred Colomb, rich dark crimson | La France, soft violet pink | Ulrich Brunner, bright cherry red |
| Mrs. John Laing, clear bright pink | Maman Cochet, rosy pink | Kaiserin Augusta Victoria, large creamy white |
| Anna de Diesbach, large bright pink, beautiful shape | Madam Carolina Testout, soft rosy pink | American Beauty, brilliant carmine pink |

All strong two-year-old plants. The above Collection, \$5.00

THE TWENTY-FIVE BEST HARDY GARDEN ROSES

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|-------------------------------------|--|---|
| (Twelve noted above) | General Jacqueminot, brilliant crimson | Margaret Dickson, white flesh center |
| Abel Carriere, rich, velvety maroon | John Hopper, fine rosy crimson | Prince Camille de Rohan, deep velvety crimson |
| Captain Hayward, carmine crimson | Jules Margottin, cherry red | Paul Neyron, deep rose, very large |
| Duke of Edinburgh, scarlet crimson | Mad. Gabriel Luizet, clear pink | Victor Hugo, extra bright crimson red |
| Fisher Holmes, deep glowing red | Magna Charta, bright pink | |

The above Collection, \$9.50. Per hundred, \$85.00

THE SIX BEST CLIMBING ROSES

- | | | |
|---|------------------------------|--|
| Crimson Rambler, fiery crimson | Dorothy Perkins, double pink | Dawson, the pink crimson rambler; very profuse |
| Pink Roamer, bright pink, white center (single) | Ruby Queen, beautiful pink | |
| | Empress of China | |

Strong three-year-old plants. The above Collection, \$2.50. Two-year-old plants, \$2.00

There is a great advantage in buying roses that have already been planted and have become acclimated. A great many losses are due to planting immature imported stock in the Spring. This can be obviated by buying established stock from an American nursery and planting now. It will become nicely established before the frost and will give a profusion of bloom next June.

While roses are a specialty of ours, we have one of the most complete nurseries in the country, where we grow stock of only the highest quality in

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Our hand-book, "The Beautifying of Country Homes," describing this most complete and choicest of stock, will be mailed on request.

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The 12 Best Roses
The 25 Best Roses**

Roses give more genuine satisfaction in profusion of bloom, glorious color and delicious fragrance than any other hardy shrub. A garden without roses is lacking in distinction and quality. There are hundreds of hardy roses all having some merit, and it is difficult for the amateur to make a selection, for some are so much more vigorous than others while some will do only in favored spots. We have had long experience in growing roses suitable for the American climate, and have selected from our extensive stock, comprising the finest collection in America, the following best all-around varieties:

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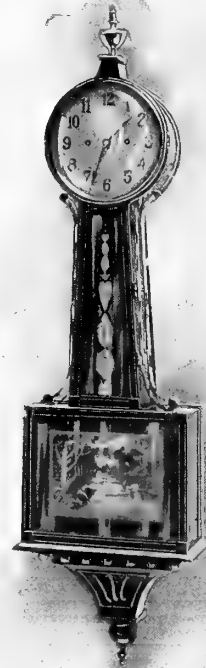
Pre-eminently the best all-around hardy garden rose is

KILLARNEY

In color it is a delicate shell pink with fine satiny petals and an exquisite fragrance. As the flowers become mature, instead of shedding their petals as do other roses, they open back and remain on the stem, making a gorgeous display and lasting for an unusually long period. The limpid pink of this rose

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THE WILLARD
THIRTY-DAY
TIME MOVEMENT**

**Fully Guaranteed
Mahogany with Cast Gilt Trimmings**



THIS clock was designed and made by Edw. K. Willard, a skilled clock-maker of London, England, in 1801. Its beauty and practical worth attracted the attention of an American clock manufacturer named George Worthington, who was in London at the time, and, securing the patent rights for the United States, he introduced the Willard to the American trade in 1812. We are now manufacturing this clock in limited numbers for special trade. If not obtainable from your local jeweler, this clock will be sent carefully packed

Height, 44 1/2 in. Width, 12 1/2 in. 8-inch Silver Finished Dial

—no charge for packing—direct from our factory on receipt of

PRICE, \$29.00

Be sure you get a THIRTY-DAY movement

We have some especially attractive new Mantel Mission clocks, of which we will send illustrations and prices on application

THE NEW HAVEN CLOCK CO.

Dept. L, NEW HAVEN, CONN.

Sole Manufacturers TATTOO Intermittent Alarm

NEVER SLIPS nor TEARS
EVERY PAIR WARRANTED
Substitutes May be Offered You to Increase Dealers' Profits

The Velvet Grip

Sample pair, Mer. 25c, Silk 50c. Mailed on receipt of price.

INSIST ON HAVING THE GENUINE

GEORGE FROST CO., Makers, Boston, Massachusetts, U. S. A.

CUSHION BUTTON
HOSE SUPPORTER

LOOK FOR THE NAME ON EVERY LOOP



Gardens that Bloom from Frost to Frost

A GARDEN of gorgeous bloom from earliest spring until frost, changing its charm from month to month—this is the garden of hardy perennials.

How infinitely better than the garden of tender plants such as coleus and geraniums, which three months in the year give you a gaudy spot of color and the remaining nine months an unsightly mud hole—inartistic; monotonous; costly, having to be renewed each year.

The hardy garden is the garden of change, growth, succession, in which each month is glorified by its appropriate flowers. Year after year this goes on, the garden increasing in beauty and loveliness, practically without any expense other than that incurred the first year. You will have new flowers in gorgeous masses of color every month from April to November, with new things every day to delight you.

We have made three ideal selections of hardy perennials from our unequalled stock that will give a succession of bloom from frost to frost. These are carefully arranged for continuous bloom, and will save the sometimes confusing task of going through a catalogue and making the selection. Adjoining these offers below are illustrated some of the flowers comprising this collection. They are arranged in the month in which they commence to bloom, but many of them continue to flower during the remainder of the season.

Sooner or later you will have a hardy garden. Why not start it this fall so that the flowers may have an early start in the spring before spring planted stock is established?

Garden of Hardy Perennials No. 1 for \$2.50

Thirty-one Varieties and species of perennials that will give a succession of bloom from April to November:

April

- 1 Giant Cowslip
- 1 Wallcress
- 1 Hardy candytuft

May

- 1 Leopards Bane, DORONICUM CAUCASICUM

June

- 2 Moss pinks, Phlox subulata (rosea and alba)
- 1 Trollius Asiaticus
- 1 Spirea

July

- 1 Campanula Glomata dahurica (Dark - blue clustered bell-flower)
- 1 Campanula Persicifolia, white (Bell-flower)
- 1 German Iris
- 1 Oriental poppy
- 1 Mrs. Lingard Phlox
- 1 Saxifraga pyramidalis

August

- 1 Shasta daisy
- 1 Speedwell
- 1 Yarrow
- 1 Beard tongue

September

- 1 Cardinal-flower
- 1 False dragon head
- 1 Gaillardia grandiflora
- 1 Hollyhock (Double pink or white)

October and November

- 3 Anemones (best varieties)
- 1 Boltonia

Garden of Hardy Perennials No. 2 for \$5.00

Contains all the plants offered in garden No. 1, with the following additions:

31 plants in No. 1 April and May

- 1 Trollius (Globe flower)
- 1 Doronicum plantagineum excelsum (Leopards bane)
- 1 Erysimum pulchellum (Hedge mustard)
- 1 Iris cristata (Crested Iris)
- 1 Iberis corraefolia (Hardy candytuft)
- 1 Ranunculus acris fl. pl. (Double buttercup)

June

- 1 Campanula persicifolia, blue (Bell-flower)
- 1 Dictamnus fraxinella (Gas plant)
- 1 German Iris, white or yellow (Fleur-de-Lis)
- 1 Thalictrum aquilegifolia (Feathered Columbine)
- 1 Centaurea Montana alba (Hardy corn-flower)
- 1 Hemerocallis flava (Yellow day-lily)

July

- 2 Achillea, The Pearl (Yarrow or Millfoil)
- 1 Japan Iris, purple (Iris Kaempferi)
- 1 Phlox paniculata, Boul-de-jeu (Hardy Phlox)
- 1 Phlox paniculata, Purity (Hardy Phlox)
- 1 Asclepias tuberosa (Butterfly weed)
- 1 Pentstemon barbatus Torrey (Beard tongue)
- 1 Monarda didyma (Oswego tea)

August

- 1 Physostegia virginica rosea (False dragon head)
- 1 Hypericum Moserianum (St. Johns wort)
- 1 Chrysanthemum maximum Triumph (Large ox-eye daisy)
- 1 Stokesia cyanea (Corn-flower aster)
- 1 Eryngium amethystinum (Flea-bane)

September

- 1 Anemone Queen Charlotte Pink (Wind-flower)
- 1 Aconitum Californicum (Monks-hood)

October and November

- 1 Chrysanthemum, white (Hardy Pon-pom)
- 1 Pyrethrum Uliganosum (Great Ox-eye)
- 2 Aconitum autumnale (Aconite)
- 1 Aster Novae angliae rubra (Michaelmas daisy)
- 1 Vernonia Arkansasana (Ironweed)

Garden of Hardy Perennials No. 3 for \$9.00

This offer includes all of garden No. 2, with the following additions:

64 plants in Garden No. 2 April and May

- 1 Hepatica triloba (Liver Leaf)
- 1 Caltha palustris fl. pl. (Marsh marigold)
- 1 Helleborus Nigre (Christmas Rose)
- 1 Aubretia (Rock-cress)
- 1 Lychnis chalcidonica (Rose campion)

June

- 1 German Iris Mad. Chereau (Pearly white dainty lavender veined)
- 1 Phlox Lady Musgrove (White with rose bar through each petal)
- 1 Phlox Circle (White with pink eye)
- 1 Aconitum tauricum (Monks-hood)
- 2 Heuchera sanguinea and robusta (Alum root)
- 3 Papaver nudicaule (Iceland poppy)

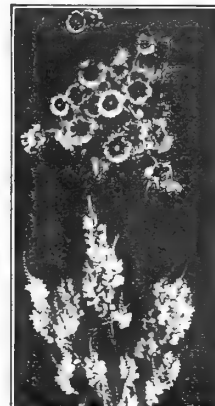
- 1 Doronicum plantagineum excelsum (Leopards bane)
- 2 Dianthus, double and single (Hardy clove pinks)
- 1 Ranunculus acris fl. pl. (Gold knots)
- 1 Spirea Japonica gdf. (Meadow sweet)

July

- 2 Japan Iris, white and lavender (Iris Kaempferi)
- 1 Veronica spicata (Speedwell)
- 1 Hemerocallis Thunbergii (Late-flowering Day-lily)
- 1 Helianthus Pitcherianus (Orange sun-flower)

August

- 2 Campanula Carpathica, white and blue (Dwarf bell-flower)
- 1 Helenium autumnale (Sneeze-wort)
- 1 Platycodon autumnalis (Chinese bell-flower)
- 1 Saponaria caucassica fl. pl. (Double flowering bouncing bet)
- 2 Hollyhocks (Choice fringed, single)



APRIL:
Cowslip Candytuft



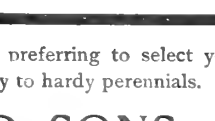
Spirea MAY: Doronicum



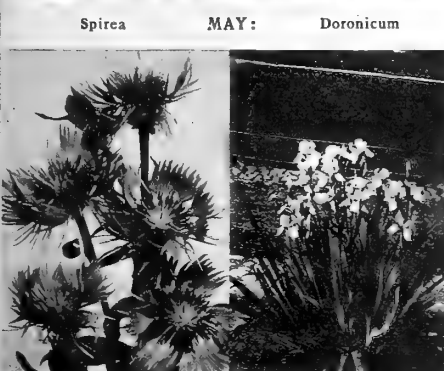
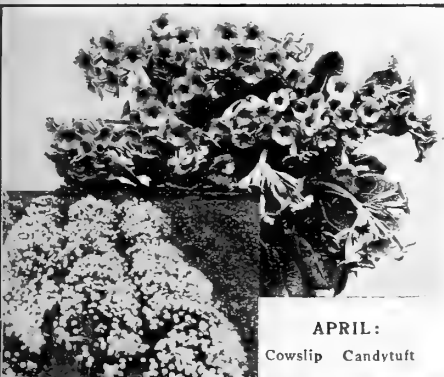
SEPTEMBER:
Japanese Anemone Boltonia



OCTOBER and NOVEMBER:
Pon-pon Chrysanthemum Japanese Rush



October and November:
1 Aster Sibericus (Starwort)
1 Eulalia gracillima univata (Graceful Japan rush)



Japanese Iris JULY: The Pearl Achillea

If you are not interested in any of these collections, preferring to select your own stock, you will be interested in our finely illustrated catalogue devoted exclusively to hardy perennials. Send for a copy.

J. B. KELLER SONS

Growers of Hardy Perennials

1023 South Avenue, Rochester, New York



The Season When
Every Live Boy Wants a

STEVENS

Rifle Shotgun Pistol

When the morning air sparkles with that vital quality that makes the nerves tingle and the red blood dance to the cheeks—when the autumn-tinted woods abound in animal and bird life—that is when the “live” boy yearns more than ever for the open and a gun.

He can have the “open,” and there is no logical reason why he should not have the gun. There are innumerable pests that play havoc with the late crops and are a source of much loss. Turn the boys loose with “Stevens”—they will make short work of little marauders, and occasionally add to the family larder with a wild turkey or rabbit or other game.

But these uses are secondary to the great benefit accruing to the boy's moral character. President Roosevelt in a letter to General Wingate, on August 19th, 1905, said: “I am glad that you have installed in each of four high schools a sub target rifle practice and are teaching the boys to shoot with the Krag, and I am pleased with the great success that you have met in this effort.”

Rifles For Boys

- “Stevens-Maynard Jr.” \$3.00
- “Crack Shot,” - - - - 4.00
- “Little Krag,” - - - - 5.00
- “Favorite, No. 17,” - - 6.00

Send for our great 140-page Catalogue FREE. It contains not only a full description of the famous “Stevens” Rifles, Shotguns and Pistols, but valuable information on hunting, the proper care of firearms, notes on sights, ammunition, etc. Every lover of outdoor life should have it. Send us your name and address, enclosing two 2-cent stamps to cover return postage, and we will send this book to you free.

Stevens Firearms are for sale by good dealers everywhere. Do not accept any other make. The name “Stevens” is stamped on the barrel.

J. STEVENS ARMS & TOOL COMPANY

420 High Street
CHICOPEE FALLS, MASS.

NOVEMBER

1905

Chrysanthemums Without a Greenhouse

PROPAGATING TENDER PLANTS AT HOME

WINDOW GARDEN MANAGEMENT LILIES AND PHLOXES TO PLANT NOW

10c.

\$1.00 a Year

THE GARDEN MAGAZINE



COUNTRY LIFE
• IN AMERICA •



DOUBLEDAY PAGE & CO
133-135 & 137 EAST 16TH ST. NEW YORK



THE WORLD'S
• WORK •



Another Amateur's House

THIS greenhouse we erected for a man at Irvington-on-Hudson. A simple, practical lay out, with a potting house conveniently arranged and a heating system that needs little attention. It is 50 feet long and 20 wide, divided in two compartments for different temperatures. Just the right size house not to be a care and rob him of the joy of it. In one side he grows violets, carnations, chrysanthemums and the gamut of flowers that resent coddling—the other side, roses. After these have seen their best days, follow tomatoes, melons and “kindred tribes.”

The house runs north and south, so the coldframes were placed on the eastern side facing the south. Here he grows Swiss chard for greens all the year around—has radishes, lettuce, parsley, etc., till first of February. He does a lot of things, and does them so easily and is so enthusiastic that he has given to us of his experience, and we have given it to you in

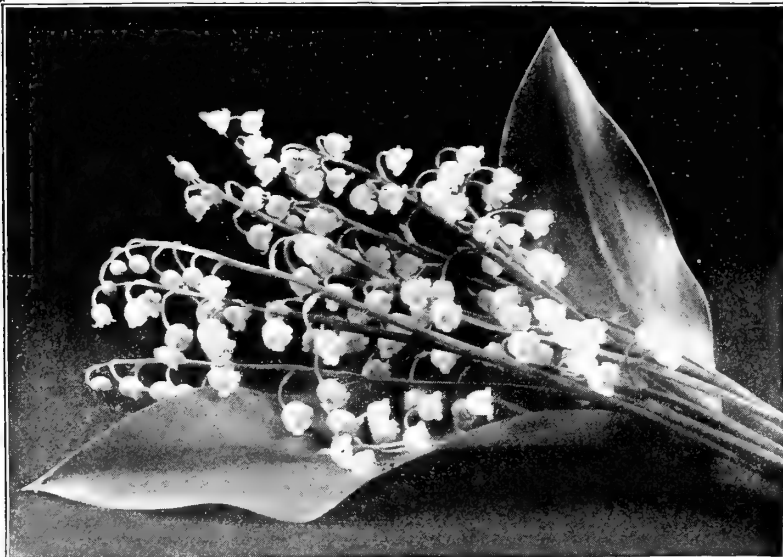
“S. S.” our booklet on Starting a Small Greenhouse.

“P. P.” on the Pleasure and Profit of Coldframes.

We want you to have one or both.

BURNHAM-HITCHINGS-PIERSON COMPANY GREENHOUSE MANUFACTURERS AND BUILDERS
1133 Broadway, Corner 26th Street, NEW YORK
BOSTON BRANCH, 819 Tremont Building

DREER'S Reliable Hardy Bulbs and Plants for present planting



Nowhere else in this country can you get such a large variety of Hardy Bulbs and Plants as from us. If you have not a copy of our autumn catalogue we will send you one on application.

Special for October and November Planting

Strong clumps Lily of the Valley for outdoor planting, ready for immediate delivery. \$2.50 per dozen; \$18.00 per 100.

HENRY A. DREER, 714 Chestnut Street
PHILADELPHIA, PA.

The Cream of the Best

James Vick's Sons

The Pioneer Bulb Merchants of the Eastern States

362 MAIN ST.,
ROCHESTER, N.Y.

If you have not a copy of our Fall List write for it NOW

For Spring Flowers in the open ground select from the bulbs, etc., mentioned for the most satisfactory and subsequent permanent results. They cause no trouble. In fact you do the planting, Nature accomplishes the balance. We mention a few here, but only the most desirable. No garden, woodland walk or drive, shady spot or lawn, is half begun if the odor and simplicity of the hardy flowers do not lend their charms to the scene.

- Hyacinths**, single or double mixed colors. \$0.65 per doz.
- Tulips**, single or double mixed colors. 1.00 per 100
- Narcissus**, single and double, including “Grandmother’s” Daffodil, the most popular favorite. 1.25 per 100
- Crocus**, one of the earliest flowers, in separate colors or in mixture, containing a general proportion.40 per 100
- Snowdrops**, the first Harbingers of Spring. 1.00 per 100
- Scilla Siberica**, a pendant flower of the most intense blue—a perfect mate for Crocus and Snowdrop. 2.00 per 100
- Iris**, the Flag Flower. For shady and moist spots these are wonderfully adapted. We have an immense collection, of our own growing, of the choicest German and Japanese sorts in superb mixture. Try a few at 1.00 per doz.

REMEMBER—That regardless of these special prices a coupon is enclosed, with orders amounting to \$1.00 or more, for these goods and entitling purchaser to 25 cents worth of Seeds to be selected from our Garden and Floral Guide for 1906.

A Home Furnished With Books

Can you imagine a more delightful life than days spent outdoors in the Indian summer preparing for fall and winter, trimming shrubbery, raking lawns, setting out bulbs, and then indoors before the fireplace, under the green shade of the lamp, with a shelf of books at your elbow to pass away the long evenings? Talk about the simple life! But this is the well-rounded life, body and mind both alert, employed and happy.

As for the books which should be a part of the furniture of every home, here are a round dozen new ones, eight just published, and four that have already found friends. These books are especially selected for their appeal to the readers of THE GARDEN MAGAZINE. All lovers of outdoors are lovers of good books.

Making a Home The Country Home

By E. P. Powell. With many half-tone illustrations. Cloth, 12mo. Postpaid, \$1.69; net, \$1.50.

This is a practical book that no person seeking to make a home in the country can afford to be without. The book takes up the problem of establishing one's self in the country specifically under the following headings: Selecting a Homestead, Growing a House, Water Supply, Lawns, Orchard, Strawberries, Grapes, Flowers, Truck Garden, The Insects, The Animals, The Beautiful and the Useful, etc. The enthusiasm of the writer and his appreciation of all the beauties of the country make this book pleasant reading for every nature lover.

The Care of a Home The Complete Housekeeper

By Emily Holt, author of "Encyclopedia of Etiquette." Nine illustrations. Cloth, 12mo. Postpaid, \$1.76; net, \$1.60.

It gives you in a nutshell the simplest and best solution of all housekeeping problems; an A-B-C of household management for every-day use, sure to prove infinitely useful to the woman at the head of the house, whether experienced or not. Kitchen Conveniences; Repairs and Restoration; Concerning Closets; House-Cleaning; In the Laundry; Cleaning of China; Glass and Metal; Keeping Things; Four-footed Friends; Pets and Poultry; Lawn and Garden, Greenhouse, Window Gardens and House Plants; Plumbing and Sanitation; The Water-supply; Lighting and Heating; Sick-room and Nursing; Bleaches, Disinfectants and Insecticides; Healing Simplex; The Family Sewing; Plain Sewing.

Home Work Outdoors The Orchard and Fruit Garden

By E. P. Powell. Illustrated. Postpaid, \$1.68; net, \$1.50.

This second volume in the Country Home Library deals with the choice planting and cultivation of fruit, fruit-bearing trees and bushes. Every known variety of fruit that grows in America is considered. General advice as to the nature, excellencies and defects of each fruit is given, and a list of those likely to do best in various localities, with many valuable hints on cultivation.

More Work Outdoors The Flower Garden

Ida D. Bennett. Forty-seven illustrations. Cloth, 12mo. Postpaid, \$2.17; net, \$2.00.

No branch of flower raising is overlooked in this book. It is a complete guide, treating of indoor gardens—window boxes, household plants, water gardens, etc.—as well as of the usual outdoor plots. It is especially practical, clear and simple, and is full of useful suggestions out of the author's own experience. The following are some of the chapter headings: The Location and Arrangement of the Garden; Seeds; Fertilizers; Purchasing of Seeds; Transplanting and Repotting; Outside Window Boxes; Vines; Ornamental Foliage; Plants from Seed; Aquatics; The Care of the Summer Rose-bed; The Hardy Lily-bed; Hardy Shrubs and Plants for Fall Planting; Winter Protection; The Care of House Plants in Winter; Common English Names of Flowers; Blooming Season of Various Trees, Shrubs and Plants; A Chapter of Odds and Ends; A Chapter of Don'ts.

A Delightful Trip Away from Home My Friend the Chauffeur

By C. N. and A. M. Williamson, the authors of "The Lightning Conductor" and "The Princess Passes." Illustrated. Cloth, 12mo, \$1.50.

Every man and woman whose soul has felt and responded to the heart-throbs of a motor, who knows its sighs and sobs, its little ailments and its great strength, will find that "My Friend the Chauffeur" breathes the spirit of automobiling. All those who have had experience in or hope to enjoy foreign travel, picturesque scenery, quaint towns and ancient castles, may take delight in these things under the guidance of "My Friend the Chauffeur." All those who like a good love story, well told, will enjoy "My Friend the Chauffeur."

One of the Problems of the Home The Work of Our Hands

By H. A. Mitchell Keays, author of "He that Eateth Bread with Me." \$1.50

The story is of a sweet young woman of poor family brought up in a strictly orthodox and God-fearing atmosphere who marries the son of the millionaire of her town. He is no more honest or more kind to his employees than he need be; and the drama of the story develops when the young wife uses his money to alleviate the misery of his poor mill workers, and attempts to make him realize that money is meant to assist people; not to aid in crushing them down. The strength of the story comes from the typical humanity of the characters and the truth and force of the situations.

The Home of Our Boyhood Back Home

By Eugene Wood. Illustrated by A. B. Frost. Cloth, 12mo. \$1.50.

It's a book about the way things used to be when you went barefoot with a rag around your stubbed toe. It will make you chuckle all the time; it will make you laugh out loud once in a while, and sometimes it will make a lump come in your throat and the tears come in your eyes—happy tears.

A Home of Strange People The Pang-Yanger

By Elma A. Travis, M.D. \$1.50.

The story concerns Abijah Bead and his love for Barbara Hunt, a Southern girl of deeply passionate nature and strong moral courage. A second thread enters into the plot in the shape of a woman who married Abijah secretly when he was young, and deserted him and their boy for a man whom she thought richer, trusting, to escape the consequences, to the fact that all the witnesses to her union with Abijah were dead. Abijah brings the little boy back to the village, that his resemblance to his mother shall reveal her story and be a witness to her shame. The author has developed the dramatic possibilities of this plot admirably; giving, incidentally, a delightful picture of the elemental people of his Catskill community, Pang-Yang.

The Country on Horseback The Horse in America

By John Gilmer Speed. With sixteen illustrations, two in color. Net, \$2.30; postpaid, \$2.50.

It gives a brief account of the progenitors of the horse, and then takes up every breed for which our country has been noted—Kentucky and Denmark saddle horses, Clay Arabians, Morgans, mules, thoroughbreds, etc. The chapters on "How to Buy a Horse," "The Stable and Its Management," "Riding and Driving," "Training Horses vs. Breaking Them," are full of first-hand knowledge every horse owner will appreciate. Mr. Speed is a practical horse breeder whose expert assistance has frequently been sought by the United States Government.

The Country on Foot Portfolio of Bird Portraits

By Bruce Horsfall. With notes by W. E. D. Scott. In twelve colors. In box, net, \$4.00. Separate prints 50 cents each.

Mr. Bruce Horsfall has drawn the portraits in his portfolio directly from the birds as he has observed them at large in Mr. Scott's aviary. These pictures, therefore, have an exceptional interest and authenticity which pictures of birds heretofore made, as a rule from stuffed specimens only, do not possess. The eight plates include those birds with which we are most familiar, such as the robin, meadow lark, the bluejay, the wood-thrush, brown thrasher, starling, bobolink and catbird.

Outdoor Play The Complete Golfer

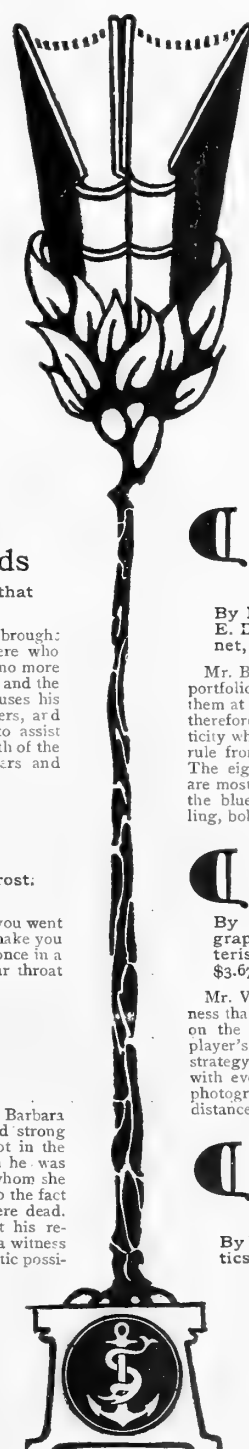
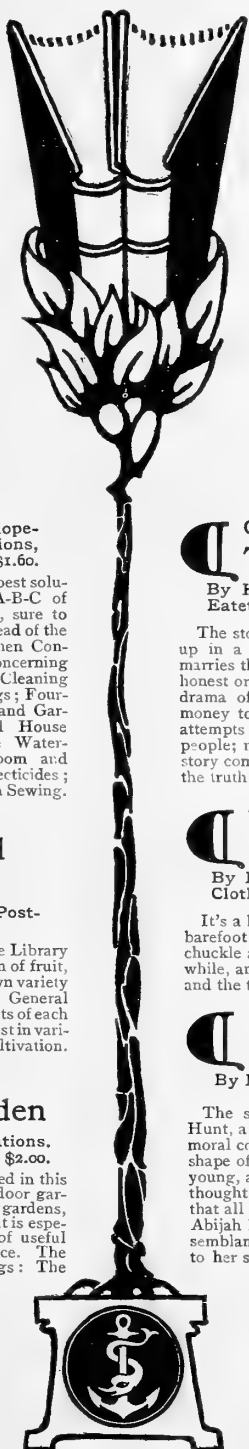
By Harry Vardon. With fifty photographs of Mr. Vardon playing characteristic strokes of the game. Postpaid, \$3.67; net, \$3.50.

Mr. Vardon goes into the subject with a thoroughness that begins with the very position of the hands on the club, and overlooks no fine point in the player's progress, from the hitting of the ball to the strategy of the game. The stance for every stroke with every club is indicated and illustrated with a photograph and a diagram of foot placements and distances between the ball, head of the club and feet.

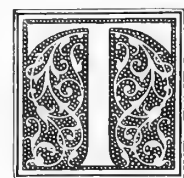
Indoor Play Foster's Complete Bridge

By R. F. Foster, author of "Whist Tactics," with many diagrams. Net, \$2.00

This is a complete manual on Bridge Whist by America's leading Bridge expert. It will serve as an introduction to the game for the beginner, but it also treats extensively of the finer points of play for the benefit of the more experienced. The author makes his directions for the proper leads very clear by a new and ingenious arrangement of diagrams, through which the playing of sample hands is indicated.



McClure, Phillips & Co.
44 East 23rd Street
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HERE is just one living author whose new poems are news events to be cabled to every quarter of the civilized world; a short story by whom is discussed as is a long novel by other writers; who has challenged comparison with the best of English literature in novels, tales, and poetry ranging through the whole gamut: indeed, it is safe to say that Mr. Kipling is the one man writing to-day whom every reader must know in order to have an intelligent idea of the intellectual world-currents of his time.



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Traffics and Discoveries	\$1.50	Life's Handicap	\$1.50
The Five Nations. (Postage 14 cents.) <i>Net</i>	1.40	Under the Deodars, The Phantom 'Rickshaw and Wee Willie Winkie	1.50
Just So Stories. (Postage 12 cents.) <i>Net</i>	1.20	Soldiers Three, The Story of the Gadsbys and In Black and White.	1.50
Just So Song Book (Music by Edw. German). Postpaid	1.32	Soldier Stories, <i>Illustrated</i>	1.50
Kim	1.50	The Kipling Birthday Book	1.00
Stalky & Co.	1.50	The Naulahka (with Wolcott Balestier)	1.50
The Day's Work	1.50	Seven Seas (<i>Appleton</i>)	1.50
The Brushwood Boy, <i>Illustrated by Orson Lowell</i>	1.50	Many Inventions (<i>Appleton</i>)	1.50
From Sea to Sea	2.00	Jungle Books (<i>Century</i>) 2 vols., each	1.50
Departmental Ditties and Ballads and Barrack-Room Ballads, <i>Revised Edition</i>	1.50	Captain Courageous (<i>Century</i>)	1.50
Plain Tales from the Hills, <i>Revised Edition</i>	1.50		
The Light That Failed, <i>Revised Edition</i>	1.50		

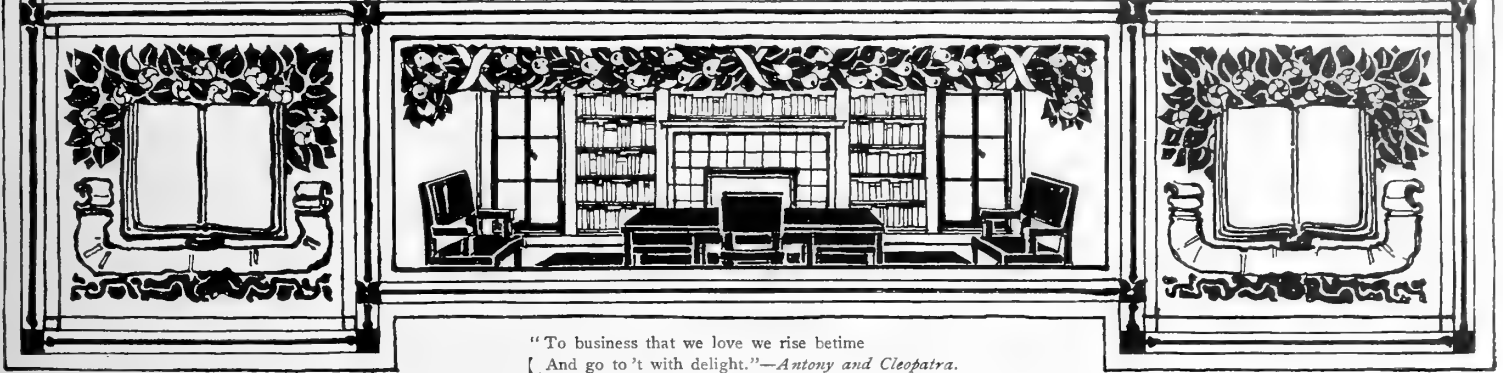
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DOUBLEDAY, PAGE & COMPANY

133-137 East 16th Street

NEW YORK CITY

THE TALK OF THE OFFICE



"To business that we love we rise betime
[And go to 't with delight."—*Antony and Cleopatra.*

STRIKES, DELAYS, AND COMPLAINTS

THE last few weeks have brought hundreds of complaints because of the non-receipt of magazines. There have been several reasons for this: During September the drivers of the New York mail wagons went out on strike, and for several weeks magazines were delayed. For instance, the mail of a certain Friday, Saturday and Monday (to complete which the bindery worked nights) was still in the city on Monday night, there being no wagons to haul the magazines to the trains. Many publishers offered to deliver the mail direct to the trains, but the red tape of the Postoffice Department, based on the laws of many years, does not permit this, the result being that hundreds of subscribers complained that their magazines were not sent promptly or not sent at all, the proof offered being that the October issues of our magazines were on sale at the newsstands. We wish to say now that all subscribers' copies are sent from our office to reach the subscriber at the date when publication is made through the newsstands.

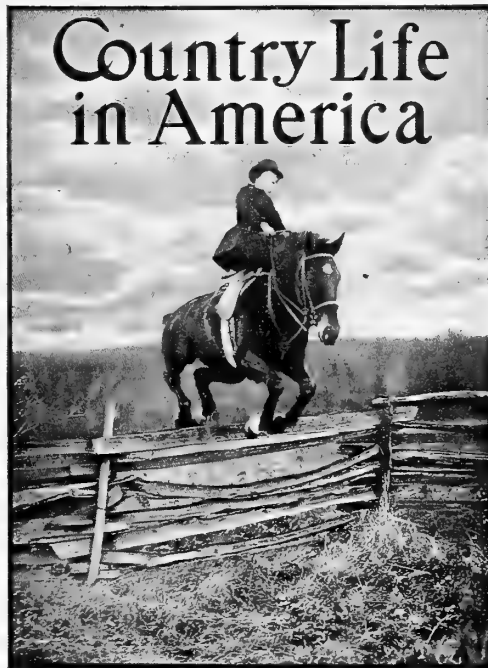
ON JANUARY 1, 1906

we are looking forward to a possible strike, and we may then have to ask our advertisers and readers to bear with us. The Typographical Union, which controls the typesetting of most offices in New York, has made certain demands which the employers' union—in this case "The Typotheta"—are unwilling to accede to. This may affect our February numbers, and we speak of the matter thus far in advance so that our readers may know that everything is being done that can be done to prepare for the great misfortune of a strike, if it should come, and that they shall be put to no more inconvenience than is absolutely necessary.

ERRORS ABOUT 2 PER CENT. OF COMPLAINTS

For some years we have been carefully building up a Complaint Department, where all difficulties in connection with any sort of complaint are carefully attended to. Of the total letters of complaint received we have now worked down the average error on our part to be about 2 per cent. of the whole, and we are hoping to very much reduce this percentage. What often appears to be bad management or carelessness is sometimes the

result of causes entirely beyond our control. For instance, every Christmas we replace hundreds of numbers taken by the janitors of apartments, the Christmas issue being the number most admired by certain classes of people who borrow from the mail without notification to the addressee. The burden of our song is this: If anything does not go right in our dealings together let us know the fault fully after you have allowed a few days of grace for the delays in mail, for a great many of our troubles are smoothed out by letters which cross each other. We cannot promise to make no mistakes, but we can and do promise courteous and prompt attention to any dissatisfaction brought to our attention.



Cover for November—from a photograph

A \$4 MAGAZINE FOR \$3

Beginning in February, the price of *Country Life in America* will be raised to \$4 a year; at the same time the magazine will be enlarged and improved. Orders may be sent now at the rate of \$3 a year or \$6 for two years. The price of single numbers will be 35 cents, except the double numbers, which will be 50 cents as before.

A "GARDEN MAGAZINE" GOLD MEDAL

This magazine is going to give itself the pleasure of presenting a gold medal now and then to a person who accomplishes something of interest or value to horticulturists. Messrs. Tiffany & Company are preparing such a medal, which we shall send to Mr. Thomas Murray, of Tuxedo Park, N. Y. who has succeeded in growing the fringed gentian from seed. This is a notable and most delightful achievement. A full account of its successful working out will appear in the Christmas number of THE GARDEN MAGAZINE. At the holiday season the garden is supposed to be dead and perhaps forgotten, but the editor in this Christmas issue does not accept this view. Here are some of the articles which will help to make the Christmas number notable:

- House Plants for Christmas.
- A Home Planted for Winter.
- Gardening Books for Christmas Presents.
- The Secret of the Fringed Gentian Solved.
- Raising Hardy Chrysanthemums from Seed.
- Wonderful Californian Flowers.
- Saving Specimen Trees from the Woods.
- An Amateur's Cactus Garden.
- Redeeming a City Back Yard.

and a great many short articles on notable achievements in gardening.

THE SUBSCRIPTION SEASON

THE GARDEN MAGAZINE has never had the good fortune to have seen what we call the "Subscription Season," namely the months of November, December and January, having only been started in February, 1905. Our readers can help us to make the next four months a season of rare achievement by doing one or all of the following things:

1. Recommend the magazine to friends who are interested in the subjects treated in *The Garden Magazine*.
2. Give subscriptions for Christmas presents.
3. Become an authorized agent to receive and forward subscriptions.

The price, \$1 a year, includes two double 25-cent numbers—the two planting issues, fall and spring.

FALL BOOKS

We call special attention to the list of fall books on page 189 of the magazine. There are several very important and beautiful volumes announced which will particularly interest the readers of this magazine.

Hardy Lilies for Fall Planting

ALL Lilies are better for fall planting, but sometimes many varieties of Japanese Lilies do not arrive before the ground freezes up. There is one method, however, by which they can be planted late in November or in December, and that is to cover the ground in which they are to be planted, before it freezes, with eight or twelve inches of stable manure. This will prevent the ground from freezing, and the manure can be removed and the lilies planted upon their arrival. We will not deliver any varieties of lilies which do not arrive until after hard freezing weather until spring, unless instructed otherwise. We re-pack in sand lilies arriving too late for fall delivery and store in a cold cellar until spring, when they are delivered as early as possible.

Lilium Superbum

If there is a more satisfactory lily or hardy plant of any kind than our splendid native Superbum Lily we don't know it. Either in the garden or for naturalizing it cannot be surpassed. In good soil it will grow eight feet high and produce twenty to thirty of its beautiful orange-red flowers in July, when bloom in the garden is not over plentiful. For vigor and reliability it is unequalled. Ten years ago we planted several hundred in a rough part of the grounds of one of our customers. They have been allowed to take care of themselves ever since and take their chance with the grass and other wild plants that have tried to crowd them out, but there are more of them and they were finer this season than ever before.

We have secured a very large stock of extra selected bulbs, which we offer at specially low prices for immediate delivery.

12 for \$1.50 25 for \$2.50 100 for \$8.00
 250 for \$17.00 500 for \$30.00 1,000 for \$55.00

JAPANESE LILIES

Longiflorum Lilies are ready in October; the other varieties we expect to receive early in November

	Per Doz.	100
Auratum. 8 to 9 inches	\$0.90	\$6.50
9 to 11 inches	1.50	11.00
11 to 13 inches	2.50	18.00
11 to 13 inches, selected bulbs	3.00	21.00
Longiflorum. The Longiflorum has large, pure white, trumpet-shaped flowers like the Bermuda Easter Lily, but is perfectly hardy. 5 to 7 inches	\$.50	\$3.00
6 to 8 inches . . . . .	.75	4.50
7 to 9 inches	1.00	7.00
9 to 10 inches	1.60	12.00
Speciosum album. 8 to 9 inches	1.50	10.50
9 to 11 inches	2.50	18.00
11 to 13 inches	3.50	25.00
Speciosum Melpomene. Similar to Rubrum, but more brilliant. 7 to 9 inches	1.35	9.00
9 to 10 inches	1.75	12.00
Speciosum rubrum, or roseum. Pink. 8 to 9 inches	1.35	9.00
9 to 12 inches	1.75	12.00
Monster bulbs	2.25	16.00
Tigrinum flore pleno. Double Tiger Lily. The only double lily worth growing . . . . .	.70	5.00



Tigrinum simplex. The well-known single Tiger Lily. Of the easiest culture, and worthy of general planting on account of its stately habit and fine effect in the landscape

Per Doz.	100
\$0.60	\$4.00

Tigrinum splendens. Improved Single Tiger Lily

.65	4.50
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NATIVE LILIES

Ready for immediate delivery

Canadense flavum. Our dainty, beautiful Lily; graceful and charming yellow flowers

1.00	7.00
------	------

Canadense rubrum. Red flowers. A most lovely and graceful lily. Fine for planting in the grass of orchards or meadows

1.00	7.00
------	------

Canadense Mixed.

.85	6.00
-----	------

Carolinianum. The only fragrant native lily

2.50	16.00
------	-------

Grayi. A small native lily; very dainty and rare. The bulbs are quite small

each, 30 cents	3.00
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Philadelphicum. Orange-red, with black spots

1.00	7.00
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We have the largest, finest and most comprehensive stock of Hardy Plants in America, including three hundred varieties of the choicest Paeonies, one hundred varieties of Japanese and European Tree Paeonies, including extra large specimens, and also the largest collection of Japanese Iris in the world and an unsurpassed collection of named Phloxes. Our illustrated catalogue describing these and hundreds of other Hardy Plants, Trees and Shrubs will be sent on request.

"A Plea for Hardy Plants," by J. Wilkinson Elliott, contains much information about Hardy Gardens, with plans for their arrangement. We have made arrangements with the publishers of this book to furnish it to customers at a very low price. Particulars on request.

New customers are requested to send references or remittances with their orders

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[For the purpose of reckoning dates, New York city is generally taken as a standard. Allow six days' difference for every hundred miles of latitude.]

Are the Big Things Done?

HAVE you planted your bulbs for outdoor and indoor bloom? They deteriorate every day after November 15th.

Any time before the ground freezes it is safe and convenient to plant hardy trees, shrubs, vines, fruit trees and berry bushes—not evergreens, peaches or the other risky things mentioned in the Fall Planting (October number).

October and November are the big months for planting lily bulbs.

Too late for peonies; not for phlox and iris.

THE VEGETABLE GARDEN

Plow the garden, if practicable, and turn under all the manure you can get.

This is about the only time one can spare for trenching and subsoiling. They are costly but permanent improvements.

Burn all weeds, so that they may not come up next year.

Cut off asparagus tops and burn those with berries on them, as the seeds may sprout where they are not wanted. Mulch with two or three inches of rough manure.

Cover spinach with coarse straw or, better, with gleanings from the horse stable.

STORING VEGETABLES

Pull up cabbages and pack them closely in a dry spot, with their heads below ground and roots above. In December heap up earth as high as the roots, or if the soil is not light cover with leaves.

North of Virginia celery for winter use should be stored before December. Dig up the plants, roots and all, and stand them close together in a narrow trench, the tops level with the ground. Cover them with boards and a little earth. As the weather gets colder, put on more earth and some manure.

If you have a root house or damp barn cellar, you can set the celery upright on the floor, so that the roots will keep moist and the tops dry.

Celery to be used before Christmas can be left outdoors, but must be covered if a cold snap threatens. It can stand 10° of frost, but nothing below 22° F.

Beets and carrots keep best in pits. Put some in the cellar for winter use, but cover with sand or sods to prevent shriveling.

THE FRUIT GARDEN

Small and lately planted trees must be staked and tied with a broad band. Cut out all dead limbs of fruit trees, "suckers" and limbs that rub together. You will have no time next spring.

If the fruit trees are growing too tall and

spindly, cut off the top limbs to make the tree spread out.

Don't leave any old grass or other mulch around the bases of trees for field mice to nest in. They will eat the bark from the tree close to the ground if it is a hard winter. After the first hard freeze (which will send the field mice to their permanent winter quarters) raise a little mound of earth around the stem for protection against mice.

Cover strawberries two inches deep with hay or straw, not this year's autumn leaves.

If you are afraid that your blackberries are not hardy, lay the plants down and cover the tips lightly with soil.

LAWN AND GROUNDS

Top dress lawns with fine compost or scrapings of barnyard. Tie straw around the rose bushes.

Put boards up on the north and west sides of boxwood hedges, if they are exposed to heavy winds and winter sunshine.

Burn all dead stalks and other matter not used for mulching, in order to kill weed seeds and disease germs.

LATITUDE OF RICHMOND

The Southern planting season for trees, shrubs, evergreens, vines, fruits and hardy roses begins in November and reaches its climax in January.

Wheat, rye, barley, timothy and vetch can still be sown, but the earlier the better. Sow Canada field peas.

Set out lettuce and cabbage plants that are to stay outdoors all winter. Sow lettuce and cabbage in coldframes. Set out asparagus roots and strawberry plants. Plant Dutch bulbs.

Sow lawn grass seed, the earlier the better.



220. The profusion of blooms that a bush-grown chrysanthemum will give is a revelation. The florist pinches off all shoots but one, which therefore develops a giant flower. The large-flowered chrysanthemum is hardy, but it is well to protect from wind and excessive cold if a long season of bloom is wanted

Campaigning with Chrysanthemums—By J. N. Gerard New Jersey

CONFESSIONS OF AN AMATEUR WHO GREW A COLLECTION OF LARGE-FLOWERED VARIETIES OUTDOORS BEFORE THE CHRYSANTHEMUM CRAZE BEGAN—FIVE- AND SIX-INCH FLOWERS WITHOUT A GREENHOUSE

Photographs by the author

IT HAS always seemed to me that the culture of the chrysanthemum has been carried in the wrong direction by the amateur as well as the florist. The chrysanthemum is a hardy plant, marvelously responsive to good treatment, easily grown by anyone who has the ordinary understanding of gardening, yet it has been nursed, coddled, and grown in heat, and the consequence has been that our notions are all warped and we have an artificial and wrong point of view. People are not satisfied with anything short of a great ball of a flower of regular form on the top of a rigid stem furnished with coarse leaves. These mammoth flowers are undeniably evidences of skilful cultivation, and I can look on them with admiration. They have their decorative value, too—in some cases—but the majority of mankind does not live in great apartments, and mere bulk does not always satisfy.

Being somewhat wedded to my idols, I have a prejudice in favor of growing hardy plants in the open; and, not being a showman or a dealer, I fail to understand the joy of laboring over my plants to produce flowers on the florist's standards.

Anyone who knows chrysanthemums knows that they are flowers of infinite variety, both of form and coloring as well as of gracefulness and ugliness. Until one has grown a collection of chrysanthemums one never realizes

what abundance of flowers means. Certainly no other plant with the same care will produce such a mass of really useful flowers in such infinite variety of size, shape and coloring. There seems to be among amateurs a revival of interest in the pompon section, the small flowers of which are less susceptible to frost than the larger blooms, but I see very limited collections of the old forms which used to delight me when I followed the fad in the early eighties; and none of the glass-protected flowers seem to me to possess the virile beauty of those grown in the open and seen in the bright October days with coolness in the air.

John Thorpe, of pleasant memory, first showed me how much "wood" and how many flowers could be had from a small slip during a single season. I never had a garden lesson which stung me more quickly and effectively, and it was not long before I was growing several hundred plants in the open—and grow they did in the full sense of the word, for a chrysanthemum is a gross feeder, and, providing the roots are right, will give an account of every ounce of nutriment fed to it, such as few other plants will. It is probably for this "easiness" that the real hide-bound amateur hardy plantsman will have none of them.

At first I grew the plants in pots, and some in a flat, from which they were transferred in

the fall to the south side of the dwelling, they suffering little by transfer. About the middle of October it was my custom to build a frame of light scantling, on top of which were placed either coldframe sashes or tarred paper. As the weather became colder a curtain of burlap protected the front at night. With care in watering, the flowers would keep well into November. Of course the place was exposed as much as possible, as plants coddled or warmed up become tender.

Later, as my collection enlarged, I protected it by a tent some 30 x 16 feet, with a height of 14 feet at the ridge. The air in this was modified and kept in circulation by hot-water pipes heated from an adjacent cellar. Here care was also taken to keep flowers as cool as possible by reefing up side curtains whenever feasible. The most strenuous gardening I have ever done was in keeping this tent on earth when the winds blew and the rains descended.

THE SIMPLE REQUIREMENTS

Really, there is no difficulty in the cultivation of a healthy chrysanthemum plant. It should have good drainage and be in good soil in the first place, and after this it is a simple question of how much manure of various kinds you can give it, with attention to watering.



221. By pinching out the tip of the main stem when it is well started a plant like this is produced. You thus get fairly large flowers. Florists allow only the main stem to grow, producing only one flower

An observant gardener can tell of course by the color and general appearance of the foliage whether the plant is assimilating proper nutriment or whether to let up or to give some quick-acting fertilizer. That is a matter of experience, not book knowledge.

Naturalists tell us that the atmosphere is full of the spores of fungi. This is a fact which is usually borne in on the cultivator some day in late August, when a cold dash of rain will start fungus beautifully on the leaves of the chrysanthemum. For this the

cultivator must ever be on the lookout, and at once wage war with the sulphur bag or bellows. Aphides there will be for the untidy, careless cultivator. I have grown my share, but offer no excuses for such easily reduced foes. Tobacco dust or kerosene emulsion will conquer them, but it is generally best to use the former late in the season.

Successful chrysanthemum culture, even outdoors, where we do not seek to raise the exhibition blooms, means a deal of attention to the growing plants. Of course, while his plants are growing the cultivator will judiciously thin out superfluous growths and cut back, to produce the number of stems which he thinks are proper for his plant. That is a matter for individual judgment and taste. When the first cool days of fall arrive the chrysanthemum man can keep fairly warm walking around his plants as he judiciously disbuds, a matter which requires taste and experience.

If one is not an enthusiast on large flowers there is huge satisfaction to be got from the fine effects of sprays, with less rigor of disbudding. You may take your choice—it's small flowers in abundance or a very few large blooms. To me distinctness of form and good coloration are more important than great size, while rigidity of stem is not a line of beauty. The picture of small plants which have been rather thoroughly disbudded for large flowers does not fascinate me. But it is one of the great real charms of gardening that each one of us may indulge his own pet fancy without causing offense to others, and we are all content to have in our neighbors' gardens what we would not tolerate in our own. Therefore let me have my chrysanthemums with plenty of flowers.

There is no disguising the fact that the grower of late fall flowers like the chrysanthemum requires certain qualities of vigor and enthusiasm not too generally distributed, but



222. If pinched earlier the plant would be more bushy without the straight stem at the bottom. By pinching the secondary shoots about August 1st, you get still more but smaller flowers

the results are profitable and the work need not be necessarily harassing. At this time, when the cultivation of the chrysanthemum is usually conducted on commercial lines, the cultivator with taste has a chance to show his individuality by selecting and growing the less-known kinds and working up a fall show certain to attract the attention and appreciation of real flower fanciers. If one cannot grow masses one might devote himself to producing a dozen or two large plants in pots. Such plants well grown are as useful as they are ornamental.



223. Chrysanthemums of all sorts can be grown in this way, and their variety is remarkable. The commercial florist's ideals have so dominated chrysanthemum growing that hundreds of beautiful forms and colors which, however, won't ship well, are now rarely seen. Nothing else gives so many flowers during the early frosts after the tender plants have been killed

Propagating Plants at Home—By James T. Scott ^{New York}

HOW THE AMATEUR WITHOUT A GREENHOUSE MAY SAVE HIS SUMMER FLOWERING AND DECORATIVE PLANTS INSTEAD OF LETTING THE FROST KILL THEM—MULTIPLYING GERANIUMS, BEGONIAS, COLEUS AND FLOWERING MAPLES

Photographs by LUKE J. DOOGUE

WITH the approach of cold weather the amateur is puzzled as to how the tender plants outdoors can be cared for during the winter. Some of the plants that have been flowering outdoors all summer can be taken up bodily and removed indoors, but this cannot be done in all cases. Propagation therefore becomes a necessity, though the fall of the year is perhaps not the very best time to increase the supply of house plants.



220. One of the wonders of plant life—you can propagate a Rex begonia by leaf cuttings. First, slit the leaf like this

The professional gardener, with plenty of greenhouses, does not find these things particularly bothersome, but even the amateur without these aids need not despair; he can attain a fair measure of success in an ordinary living room if it is warm, airy and not dried out by overheating. Certain plants, such as tender roses, carnations, crotons, are difficult to grow elsewhere than in a greenhouse, as they are continually attacked by aphid and red spider.

THE EVER-POPULAR GERANIUM

Geraniums are perhaps the best known, and on the whole the most useful, of all house and bedding plants, and it is easy to keep a supply of your favorite variety for next year. It does not really pay to lift the old plants from the open border, although they may be taken up and hung up in the cellar, out of frost, to start up again next spring. A much better way is to select the well-ripened tips of the shoots now and make cuttings.

There are various ways of treating the cuttings, each grower having his own particular method, and it is usually a delicate matter to tell anyone that he is wrong. Sometimes cuttings are put into the earth or sand, with every leaf cut off except the few small ones on the growing tip, and the cuttings are packed in "as thick as hair on a dog's back." I think this is a disadvantage for the cuttings, and they are sure to become weakened. They present a wretched appearance for months, and it is questionable if the plants ever get over this preliminary crowding.

The ideal cutting should be about three inches long, short jointed and firm. Two or three fully developed leaves should be left. The others—and also the bracts and flower buds—should be broken off close to the stem. When carelessly cut off the portion of the leaf stalk left behind usually decays, and many of the failures and much of the "damping off" can be traced to this. "Damping off" is a rot that kills the young plants before they are properly rooted. Have your knife sharp and do not squeeze it through, nor yet make a long, diagonal cut, as if whittling a stick. Hold the portion that is to be a cutting with the thumb and forefinger of the left hand, place against it the thumb of the right hand (which holds the knife) and then draw the blade through the stem. Commence with the base of the



221. Then you lay the leaf down in a box of sand. (It is best to bake the sand to kill the "damping off" fungus)

blade and draw toward the point. Do not let the edge of the blade strike the middle of your thumb. This disfigures your thumb and bruises the cutting, as it is squeezed between the blade and the thumb. When the thumb is merely used to steady the cutting and the blade drawn through, so as to come out at the side of the thumb, the disfiguring and bruising are avoided. Geraniums may root readily with less care, but the principle of making a cutting holds good in other things, and the geranium is a good steady plant for the amateur to begin on as practice.

If it is desired to have a large quantity of geraniums the cuttings must be put into boxes or flats, which should be two and one-half or three inches deep, and any length and width that may be desired so long as they can be conveniently handled. They must have holes in the bottom for drainage, just as is done for window boxes. Cover the

bottom with a thin layer of leaf soil or light turf, and on top of this about two inches of clean sand.

STRIKING THE CUTTINGS

Sand is the best medium for use in propagating—the cleaner the better. A cutting, having no roots, if placed in material containing decaying organic matter is liable to be attacked by disease.

Place the cuttings in the sand about one and one-half inches deep and two inches apart each way, and make the sand quite firm around each one. After the box is full soak thoroughly with water, and place in the sash bed or window.

Shade with a newspaper for a day or two, and in from three weeks to a month your cuttings will have roots and require stronger nourishment. One good soaking is usually sufficient watering until the roots appear. But give a light spraying on bright days to prevent undue evaporation. This keeps the leaves fresh.

As soon as well rooted the cuttings should be potted up in small pots or boxed over again in fairly fertile but light soil. Water carefully until well established, and never allow the young plant to flower until it has an abundance of roots.

Other plants which can be treated in the same way are: Heliotrope, ageratum, begonia, alyssum, cuphea, fuchsia, alternanthera, salvia, abutilon, hibiscus.

The coleus wants a closer, more humid,



222. The leaves throw out roots at the places where they come in contact with the wet sand



223. In a few weeks you get new plants springing from the old leaves. A joy to children



224. Never set out in the spring an old geranium plant that has been in the cellar all winter or you will get leggy, straggling plants, like half-grown roosters. Watch this old stump

atmosphere, and if possible more heat. This can be secured by covering with a bell glass, or the flats may be surrounded and covered with panes of glass, thus forming a complete case. A coleus will root in from seven to ten days in a dwelling house, but if the cuttings once get thoroughly wilted they will never recover.

If only a few plants are needed, two and one-half or three-inch pots can be used instead of flats. Use leaf mold and sand, the same as in the window boxes, and insert the cuttings so as just to touch one another around the edge of each pot, and the same treatment as described above holds good in every other respect.

PLANTS THAT GROW FROM LEAVES

There are a few plants which can be readily propagated from leaves. Of these the most useful are rex begonias, gloxinias, umbrella plant (*Cyperus alternifolius*) and peperomias.

The leaves of the Rex begonia can be cut into pieces, each piece having one or more of the larger nerves or veins. Fill a shallow box or flower pot with sand, just as you would do for the geraniums, and stick the end of the leaf fragment into this in the same way as you would put in any other cutting. It does not matter if they are crowded together. In due time bulbils will form at the end of each vein or midrib, and very soon roots and young leaves will develop. When these little plants are large enough they may be lifted out of the cutting box and put into small pots, singly, using a light soil.

Pepper elders (*Peperomia*) and gloxinias must have a part of the leaf stalk attached. Dibble them into the sand quite deeply and water once thoroughly; afterward water sparingly, because the leaves, being soft, are liable to decay before bulbils form.

Leaves of *Cyperus alternifolius* root very

readily in water. They will float on top of a tank or basin of water and need no further care. Young plants form in the axils of the leaflets, and when large enough they may be removed and potted in soil.

PLANTS TO BE CARRIED OVER

Alternantheras do better if the old plants are potted and kept in a sunny place, moderately dry, till spring, when they will make lots of young growths, which can be taken off as cuttings. Old plants of *Begonia Vernon* taken up and potted now will flower abundantly all winter, and numerous cuttings may be had from them next March and April. All the common flowering maples (*Abutilon Thompsoni*, *Souvenir de Bonn* and *Savitzi*) will also give plenty of plants in the spring, but they must be cut back severely after



225. The same plant three weeks later, after it has had a chance at light and water

lifting—say to within nine to twelve inches of the pot.

Both kinds of the popular ornamental asparagus, usually grown as house plants (*Asparagus plumosus* and *A. Sprengeri*), are raised from seed. Sprenger's asparagus flowers readily when the plants get large, and the red berries are one of the prettiest features. Save seeds from these and sow in early spring in a light, well-drained soil. *Asparagus plumosus* very rarely produces seed when grown in a pot.

Ferns of the Boston type can be readily increased at any time by breaking off some of the small plants (with roots intact) that grow around the edges of the large pieces. Pot them up in any size pot that is sufficiently large to contain these roots, but never "over-pot" them (over-potting is putting a small plant in a big pot). They form roots much more quickly in a small pot, and they can be repotted as often as they require it. Any plant needs to be repotted



226. A good geranium slip. You want to cut square across with a sharp knife right under a joint. All sorts of cuttings, as a rule, root better there than between the joints

into a bigger size as soon as its present pot gets full of roots, and no sooner. Growth is much quicker, too, if only a small shift is given each time. It is best to use a pot about one size larger, or say from a three-inch to a five-inch, from a five-inch to a seven-inch pot, and so on.

"HARD" AND "SOFT" WOOD CUTTINGS

Cuttings are of two kinds, viz., "hard-wood" and "soft-wood." Hard-wood cuttings are more difficult to root than the "soft-wooded." A soft-wood cutting will "callus" or heal and form roots, no matter where the cut may be.

The azalea and abutilon are hard-wood cuttings; the geranium and coleus are types of the soft-wood cutting. Hard-wooded plants have a woody stem, a pithy centre (in a young state) and a well-defined bark; a



227. Now we shall raise new plants from cuttings and beat the old plants "all hollow"



228. In two weeks they will be ready to put in small pots—say two inches across

hard-wood cutting will bend right over without snapping or breaking, but a soft-wood cutting does not show these characteristics and will snap clean through if bent to a right angle. A hard-wood cutting should always be cut close to a leaf joint, the wood at this point being firmer and less pithy than at any other, and it roots most readily when taken off the old plant in a young and growing condition. Always use a sharp knife, and have a heel (or very small part of the older stem) attached to the cutting.



230. This is the only expensive part of the propagating outfit. It costs \$1.50 and fuel. For two days costs five cents. But it is cheaper than a greenhouse or even a coldframe

A Home-Made Propagating Device That Does Wonders

By L. J. DOOGUE, Massachusetts

A VERY good propagating bed, that will turn out sufficient plants for the ordinary home garden, can be made and maintained at small cost. Three boxes are necessary. Soap boxes will do, if the length and



231. Homelier than sin, but the only good device I have ever seen for multiplying in a dwelling house plants that require bottom heat

width are equal, so that they will closely fit upon one another. Besides these there will be needed a large, deep pan, two half-gallon jugs, sufficient zinc to serve as a bottom for one of the boxes, one peck of coarse sand, and a foot heater such as is used in carriages during the winter.

Using one of the boxes as a base, bore a few holes near the top for ventilators, which can be controlled by the use of corks. In this lower box place jugs filled with hot water during the day, when little heat will be required. At night use the foot heater, putting in about one-half a cake of fuel just before retiring. Take off the top of one of the boxes and nail strips along the sides wide enough to hold the pan of water. This box will rest over the compartment with the heater. Cut the last box so that the back is about three inches higher than the front, in order to get the best distribution of light. Fill it to the depth of three inches with coarse sand.

This is the upper box, and should be covered with a pane of glass. If these boxes fit tightly upon one another so no heat can escape, and if the jugs and pan are filled with hot water, a temperature of 80° can be maintained all day by filling the jugs two or three times. Keep a small thermometer plunged in the sand, and for a few days before putting in your cuttings experiment to ascertain under just what conditions the heater will do the most satisfactory work. I made two of these home propagators, one of which I gave to a friend to test in his house.

In his test he used the hot-water bottles both day and night at first, but he found that the conditions were not satisfactory for night use and discarded the jugs for the heater. During the day he filled the jugs but two or three times to keep up an average heat of 80°. With the heater a very much greater heat was generated, but by using the ventilating holes a satisfactory temperature was effected. After getting the heat under control he put in the first batch of cuttings—coleus, vincas, fuchsias, heliotropes and begonias. He put in twenty of each, and within fifteen days they were sufficiently rooted to pot off. From this bed he has stocked his garden with a great variety of plants.

I put the other bed to a more severe test, though an equally successful one. I filled it up with cuttings from rubber plants, plunging them in the sand without other preparation than cutting them with a sharp knife, leaving the surface clean and smooth. I did not lose one of the lot. Rubber plants grow so tall after a few years that one feels impelled to shorten them. This can easily be accomplished by cutting off the top and rooting it. Young plants can also be started from each joint of the old stem, thus from one old plant which has outgrown its usefulness a great many can be raised easily. After the rubber plants I put in *Pandanus Veitchii* with success. Then I took a few large leaves of *Begonia Rex*, cut the ribs on the back, made a number of incisions in the leaves and then placed them on the sand, pressing them down to make a good contact all around. From each incision a plant started, and in six weeks I potted off twenty-five sturdy, clean begonias from five leaves.



229. Or, if we are cramped for room, we can raise them in boxes, but they will get a slight setback when transplanted again. See how soon they begin to flower

During the day I kept my bed in a good light near the window, ventilated it by raising the glass, protected it with paper when the sun was strong, and at night when cold I threw a carriage robe over it. From the results I have had I feel convinced that the little propagating bed is as practical as the larger ones used in greenhouses and will do the same work on a reduced scale.

The cost of its construction and main-



232. Another view of the three boxes that make the propagating outfit

tenance foots up as follows. The item of jugs and sand is not considered, as both of these can be obtained about a house without cost:

Three old boxes.....	\$0.10
Carriage heater.....	1.50
Fuel enough for two days.....	.05
Sheet of glass.....	.15
Small Fahrenheit thermometer.....	.15
	<hr/>
	\$1.95



233. The top box with the zinc bottom holds the sand, the middle one the water pan, and the bottom one the heater

A Home-Made Greenhouse for \$57.80—By Will W. Stevens West Virginia

A BEGINNER WHO HAD NEVER BEEN INSIDE A GREENHOUSE MAKES A 10x16 HOUSE IN WHICH HE RAISES WINTER FLOWERS, STARTS PLANTS FOR SALE, AND CLEARS THIRTY-THREE PER CENT. THE FIRST SEASON

Photographs by the author

MY little greenhouse is not a "model" greenhouse, but it has done the work it was planned for, and other amateurs could at least do as much. On New Year's day work was begun; lumber and locust sills were got in



This little 10 x 16 greenhouse cost \$41 for materials, including heating apparatus. The section at the rear is a tool shed

place. The house is a small affair, 10 x 16 feet, with the long axis north and south. The location is a dry sunny point.

My knowledge of greenhouse construction was very limited; in fact I had never been inside one. Of course anyone knows that plants must have air, moisture, sunlight and warmth, and just enough of each to make them thrive in rich soil. And, armed with those facts, I started to plan and build.

For the roof I bought eight old hot-bed sashes, 3 x 6 feet, already glazed, which cost me, including freight, \$2.40 apiece. Four feet at the rear of the building is covered with roofing paper and used as a surveyor's office, where also bulletins, catalogues, magazines, seeds and the like are stored, and are right at hand for use.

The sides of the house are made of inch oak boards doubled and lined between with building paper. The front is made from ordinary window sashes. The cost of all material exclusive of ceiling—the ceiling not having been put on the first year—was thirty-three dollars. The entire work of construction was done without hired help, evenings and Saturdays.

On February 29th fire was started in the sheet-iron heater. The fuel expense is no more than a little labor to prepare the wood. The heater is surrounded by brick walls. The bricks hold heat and also protect plants too near the stove.

A box of cabbage and cauliflower seed, planted February 10th, was brought from the kitchen, and the leafless geraniums were moved from the "pit" into the "greenhouse."

The rich black soil from the woods—a cattle resort in summer—seems to be ideal for plants. Earliana tomatoes, more Wakefield cabbage and early radishes were sowed;

onions were planted; other seeds were sowed from time to time.

The little plants seemed to be doing well. One morning the thermometer inside had risen to eighty; this was about fifteen degrees higher than I liked to have it in the early morning. Some of the largest tomato plants were falling by the way. They continued dropping over and withering. They had become victims of the damping-off fungus, as I learned through the State Agricultural College. "It is one of the troubles that every beginner has to contend with, and many of the more experienced as well. You have probably kept your greenhouse too warm and used too much water. Try keeping the plants a little dryer." This advice was carefully followed, and there were no more losses from "damping off."

Some of the tomatoes were transplanted into empty tomato cans, which had been slit down the side and across the bottom and then



All kinds of flowering plants from the living rooms were nursed to fresh vigor in the greenhouse

grew. If it were all to do over, I should build a little larger and put in more glass on the morning-sun side.

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THE DETAILS OF COST

8 hot-bed sashes (3' x 6' glazed).....	\$16.80
Freight on same from Chicago.....	2.60
8 window sashes.....	6.30
Tin to cover "comb" and joints in the roof....	1.63
Nails, screws, etc.....	.78
1 roll building paper.....	.75
1 roll roofing paper.....	1.25
Stovepipe.....	.50
Paints and oil.....	.47
2 pairs hinges and screw hooks.....	.23
Glass and putty.....	.30
Poultry netting for windows.....	.24
For hauling materials.....	1.10
	<hr/>
	\$32.95

To the foregoing, which represents the total cash outlay, there might be added the following items furnished from home:

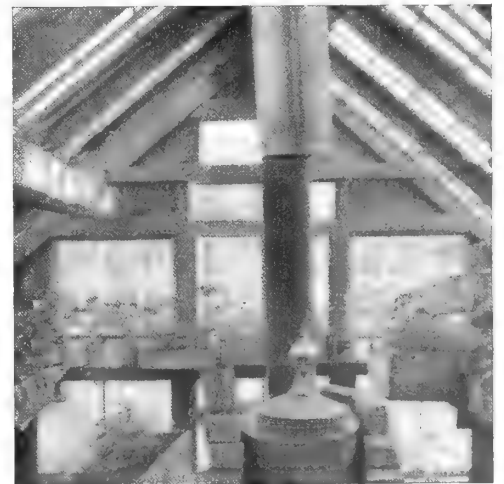
510 feet oak boards @ \$1.00 per hundred.....	\$5.10
Logs for sills.....	.75
Heater worth.....	3.00
Time estimated eight days (a carpenter would have charged two dollars per day).....	16.00
	<hr/>
	24.85

Total cost.....\$57.80

WHAT THE GREENHOUSE EARNED

7½ doz. large tomato plants @ \$1.00 per doz..	\$7.75
51 doz. small tomato plants @ 15c per doz...	7.40
750 cabbage plants (10c. doz. and 40c. hundred).	3.80
2 doz. cauliflower plants.....	.30
4 doz. onions.....	.50
	<hr/>
	\$19.75
Paid for seeds.....	55
	<hr/>
Net cash profit.....	\$19.20

As a few minutes morning, noon and night sufficed for looking after the greenhouse, the net cash profit was a clear gain of about 33½ per cent. on the investment. We had the onion sets on hand, but what they would have cost is overbalanced by the plants supplied for home use and those given to friends.



A wood stove did the necessary heating. It was set in bricks to economize and control the radiation



Dig the tree with a good ball of earth, to hold the roots

Carefully root-prune, cutting back the larger broken ends

Wrap in straw for burlap, to hold soil and prevent drying

Carrying home one of the trees from the city nursery

How Boston Encourages Tree Planting

A CLEAR-CUT SCHEME FOR SECURING SHADED SIDEWALKS—HOW BOSTON CUTS THE RED TAPE, GIVES A PERMIT TO TEAR UP THE SIDEWALK, AND FOR SEVENTY CENTS ACCOMPLISHES WHAT THE INDIVIDUAL WILL NOT DO, BECAUSE IT COSTS \$5.00, AND A THOUSAND-DOLLAR BOND

Photographs by LUKE J. DOOGUE

TREES to the number of two thousand are distributed gratuitously each year by the city of Boston for planting along the sidewalks. The result of all this missionary work has been that the city, even in its crowded districts and all through the suburbs, has taken on a characteristic garden effect that impresses even the casual visitor. From shade-tree planting to shrubbery planting for ornamental effect in the front yards is but a short step of progress. Whole streets have thus been planted which otherwise would have remained treeless for very many years.

The stock used in this way is purchased by the city from the large nurseries as opportunity offers, and comprises maple, elm, ash, beech, poplar, linden. The trees cost, landed at the city nurseries, including freight and cartage, about seventy cents apiece. So far as possible the special desires of the

applicants are supplied; first choice is for the rock maple, next comes the elm, and then the poplar. The trees are grown in the nursery for from two to three years before being given out, and at the time of delivery they are excellent specimens. With each tree is given a circular emphasizing the necessity of good loam and careful planting. When several trees are taken a reliable man is sent to supervise the work of planting.

In order to see that the results are satisfactory to the city, there is an annual stock taking in the fall which has developed the interesting fact that fully 80 per cent. of those trees reported dead were found to have been killed by too deep planting—as much as three feet deep in the worst cases, despite the underlined directions in the circular.

It was a matter of pleasant surprise in making a record of the trees to find that a very large percentage of the requests came from districts where one would hardly think people could afford to spend any part of their small incomes otherwise than on the necessities of life.

Great interest in the work has been shown by the many civic improvement associations and tree clubs; hundreds of their members have taken and planted trees. This has been very satisfactory. The members of these organizations realize the objects in view, and also understand the necessity of the work being done properly.

Two years ago one thousand trees were reserved for the Roxburgh Tree Club and it has succeeded in distributing the entire lot. The Bethelstone Tree Club planted 125 trees last year, and the East Boston Home Club planted quite a number on the public streets. Every improvement association and tree club has been represented.

Twice annually for the past ten years the Department of Public Grounds has given these trees to any one that would apply for them, the only condition being that the trees would be planted either on the highway or on the edge of the lawn, so that in time the shade would fall across the sidewalk. The superintendent of the department also obtains the necessary permit for opening the sidewalk, which if otherwise taken out would require a thousand-dollar bond.

Notice of these distributions is given in the daily papers. Applications are made in writing to the Superintendent of Public Grounds, and if, after an inspection of the proposed place of planting the conditions are found favorable, an order is mailed to the applicant, who can then get the trees on application to the nursery.



The trees are grown-on in the city nursery, properly tended and root-pruned. These are maples



Trees not distributed in the fall are heeled in over winter, ready for handling in spring



238. The moss pink (*P. subulata*) is valuable for banks where grass will not grow, and for shady places under trees, but prefers sun. Numerous varieties



239. The blue phlox (*P. divaricata*) will flourish in woods and in rockeries. It is not well adapted for planting in flower beds. One of the few blue flowers

All the Species of Phlox Worth Cultivating—By Leonard Barron New York

A GUIDE THAT WILL HELP ONE MASTER THE COMPLICATED GROUP OF TALL PERENNIAL GARDEN PHLOXES—THE CREEPING PHLOXES, WHICH CARPET THE HILLSIDE WITH CONTINUOUS SHEETS OF FLOWERS IN SPRING—A NOVEL FEATURE IN WILD GARDENING

Article IV in the series of "Little Monographs"

USUALLY, when speaking of phloxes, the tall perennial phloxes are meant, but there are dwarf species which carpet the ground on slopes where grass will not grow. It is an interesting commentary on American horticulture that we still look abroad, espe-



240. One of the most distinct forms of the annual *Phlox Drummondii* is the "Star." The petals are deeply cut. Easily grown from seed

cially to France, for the best and newest in the perennial phlox. It is a purely American plant, the product of two or three native species, yet we are dependent upon the Old-World florists.

THREE TALL PERENNIAL PHLOXES

These perennial phloxes are the very much improved descendants of several wild species,

all natives of North America, from Canada to Florida and west to Minnesota. The two chief species are *Phlox paniculata* and *Phlox maculata*. The first of these is a tall plant, with small, thin flowers of a rather disagreeable pink-purple color, varying to white, and of no garden value save earliness. *Phlox maculata* is also tall, having a spotted stem, flower heads narrower and dwarfer; the flowers are pink or purple and worthy of cultivation.

In the garden varieties the blossoms are borne in large panicles, often a foot or more in length, on stems two to five feet high. The colors range from pure white to scarlet, purple, pink and dark crimson, with endless intermediate shades. The varieties vary considerably in vigor, habit of growth and time of blooming. Some of the earlier sorts begin to bloom in June, others will be two or three weeks later, and a few—the well-known old white variety, Pearl, for example—seldom come into bloom before August. A still earlier flowering type (*Phlox glaberrima*), which comes into bloom in May, is but little cultivated here, although a favorite in Europe. All these have been hybridized, and the whole mongrel race is often spoken of as *Phlox decussata*. For garden purposes this artificial group is a convenience, yet the name is misleading.

The later tall flowering phloxes are divided into summer and autumn flowering, according as they partake of *P. maculata* (June-July) or *P. paniculata* (July-August). The early flowering *P. glaberrima* varieties have also been blended with the late maculatas, resulting in a bewildering confusion when any effort is made to identify them by species. Generally, the early flowering type is more dwarf and has a perfectly conical head of flowers.

The later types have flatter and broader flower heads. The Carolina phlox (*P. ovata*), which flowers in May, is of lower habit than the others—about one and one-half feet.

The perennial phloxes show to a very remarkable degree the correlation of color in different parts of the plant. It is easy to tell beforehand whether your plants are to have light or dark shades in the flowers. White flowers invariably accompany plain stems; blue, purple and red are accompanied by more or less brownish color of the stems. This is true even in the *Phlox maculata*, the white-flowered varieties of which are without spotted stems.

A great charm of the phloxes is that they



241. The flowers of the moss pink are so profuse that the tuft becomes a sheet of solid color. Unequaled for wild planting on rockeries and banks



242. For a purple or violet-blue carpet plant the creeping phlox (*P. reptans*). Less compact and taller growing than the moss pink

can easily be made to do almost anything. They will flower early or late, as dwarf or tall, in dry soil or in moist soil. When planted intelligently, the perennial phlox border can be made to yield flowers from May till frost. As the late-flowering kinds grow taller than the earlier ones they should be planted in the back rows, but the mixing of the species already explained reverses this order and gives us some early flowering tall varieties and late flowering dwarfs. A happy combination is to plant in beds in alternate rows early and late flowering types, and a further variation in the season of flowering can be brought about by cutting down every alternate plant in each row in the early part of the season to induce late flowering.

NOTHING EASIER TO GROW

No amateur can afford to be without these phloxes. If you have none as yet, send at

once for the catalogues or read the November *Country Life in America* for the best varieties. Plant a new bed this November. They will even grow on a poor soil and flourish more and more as they are given better, richer soil. Really I don't believe there is a limit to the enrichment they will take and pay for. Frequent waterings after planting mean unqualified success in growing phloxes. Begin in the early summer and use the hose every week right through until the fall, and you will have all the flowers you want. Every three years the old plants should be lifted out from the bed, in October or November after the foliage dies, or in early spring, and divided.

The tall phlox seeds so easily that anyone who wishes to raise new varieties can do so by sowing the seeds outdoors in the fall, as soon as gathered, and covering them with a light mulch of leaves. But what we need is fewer and better, not merely different, kinds.

One species (*P. divaricata*) has blue flowers in early spring. It is fragrant, and is sometimes called wild sweet william. It makes a good edging to a bed of the late kinds, and flowers before them. It is a creeping phlox, but its flowering stems stand up a foot and a half high. It is useful to extend the season, but its best place is in rich ground along the borders of woodland. It will grow in dense shade, where its blue color is particularly effective.

THE EARLIEST SPRING FLOWERS

The evergreen "moss pink" (*Phlox subulata*) is one of the earliest of the perennial spring flowers. It is so popular indeed that there may be a danger of overdoing it with the little plant. Once established, it spreads to make a wider circle each year. It begins to grow as soon as the spring arrives. It will even make an opening in the snow and give a touch of bright green before the grass. By April or May the green is completely covered by the flowers, which, opening almost simultaneously, make a sudden change of color in the garden. There are many forms, flowering at slightly different times, and varying in

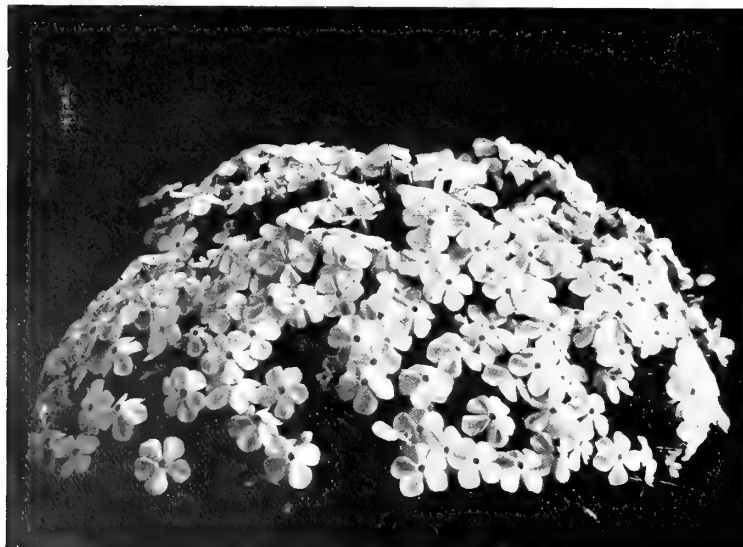


243. The pink phlox of Carolina (*P. ovata*) grows a foot high. Flower heads flat topped. This species is probably used in some of the modern tall perennial hybrid phloxes of gardens

color from white to pink and pale purple. It is not only the most useful of the dwarf phloxes for carpeting purposes, but it is valuable, too, as a soil binder on sloping banks where grass fails. This and other carpeting phloxes refuse to grow in a wet soil. They are perfect ironclads as to frost and flourish in full sun or partial shade, preferably the former. Old-established masses will sometimes show a tendency to rot and die out in spots during spells of long-continued wet weather, but this can be prevented by shearing as soon as they have done blooming. Sheep-shears make a handy tool for this purpose.

OTHER EXCELLENT CARPETING PLANTS

There are a great number of these carpeting phloxes recorded in the floras, but only a few of them are grown in gardens. I think we could get along very well with two—the



244. A little-known plant very valuable for carpeting on elevated dry soils is the Western phlox (*P. Douglasii*). An excellent substitute for the moss pink



245. For a permanent, typical old-fashioned border the garden hybrids of the perennial phloxes (called *Phlox decussata*) are unequalled. Replant every three years



246. The one annual phlox (*P. Drummondii*). Comes in almost every color but yellow. There are good buff

moss pink for all ordinary situations, and the Douglas phlox (*P. Douglasii*) for specially dry soils where the other will not grow. It is found wild from Nebraska to the Pacific Coast, but is little known in Eastern gardens as yet. There are wild forms, varying from white or lilac to purple.

The phloxes of this type do not produce seed easily and are increased by division, or by cuttings which are taken off in spring after the blooming season and develop into nice-sized plants by the following year. An easier way to build up a stock of young plants is to sprinkle sandy soil on the established tuft, working it in with the hands. The trailing branches will root, and can be removed as rooted plants next season.

Other well-known carpeting species are *P. amœna*, *reptans* and *Stellaria*. The last named has pale-bluish white or blue flowers with narrow petals, giving a star effect. It grows less than a foot high and is useful to let run wild on a rockery. As a plant for the flower beds it is too thin and ragged looking. *Phlox amœna* doesn't make such dense tufts as the moss pink and grows generally six inches high—sometimes a foot, however; flowers purple, pink or white; good for dry situations, but I prefer *P. subulata* on the whole. Plant *P. reptans* for a creeper with purple flowers, but it is a straggly looking thing. Still, its color is unique in the family.

ONE ANNUAL PHLOX

There is just one phlox (*P. Drummondii*) that must be sown every year. Being one of those things that will surely grow, it is planted each year in enormous quantities and suffers from overcrowding. There should be a foot of space between the plants in each direction, but as a general rule the seed is broadcasted, and the young plants are allowed to remain where they grow without thinning. It is every bit as important to thin out annuals in the garden as it is to thin apples in the orchard. This is an error made in growing most plants that come easily from seed. In thousands of gardens where *Phlox Drummondii* is sown annually it gives a few straggling flowers and is over, whereas under better conditions, with good soil and plenty of room, it will continue to flower profusely all summer. There are several forms of the annual phlox which are offered in the seed catalogues under a variety of names, but they are all selections from the one species. The best known are the Heynoldi and Star. The

latter has the petals deeply cut and a long, narrow "streamer" from the end of each. All these embrace a range of colors from white and rose to deep crimson.

Improvements in the colors of phlox during recent years have developed, on the one hand, better whites—that is, flowers of pure color, with no "eye"—and, on the other hand, progress has been made among the deeper purple shades until some of the recent varieties are of such a purple that under artificial light they appear to be really blue. This should be remembered when weighing the comparative merits of varieties. There is no yellow phlox; in all probability there never will be. The nearest approach to a yellow is in the buff varieties of the annual phlox.

- A HORTICULTURAL KEY TO THE BEST PHLOXES
- A. Duration annual. *Drummondii*
 - AA. Duration perennial.
 - B. The tall growers; 2 to 4 feet.
 - C. Blooming in May. *glaberrima*
 - CC. Blooming in July. *paniculata*
 - CCC. Blooming in August and September. *maculata*
 - BB. The low growers.
 - C. Height 1 to 2 feet.
 - D. Flowers blue or bluish. *divaricata*
 - DD. Flowers pink. *ovata*
 - CC. Height 6 ins. or so.
 - D. Flowers purple or violet. *reptans*
 - DD. Flowers silvery gray. *Stellaria*
 - CCC. Height less than 6 inches.
 - D. Flowers pink to white, blooming early spring. *subulata*
 - DD. Flowers pink to white, blooming late spring. *amœna*
 - DDD. Flowers lilac to white. *Douglasii*



247. A typical head of the late flowering tall perennial garden phlox (hybrids of *P. maculata* and *paniculata*, and possibly others.) Gardeners have given the title *Phlox decussata* to this hybrid group, which flowers in one form or another from June to October. Plant during October and November

How to Make New Varieties—By M. J. Iorns Iowa

JUST WHAT TO DO IF YOU WANT TO MAKE NEW PLANTS IN YOUR OWN BACK YARD—EXPLICIT DIRECTIONS WITHOUT SENTIMENTAL GUSH OR SHAM MYSTERY—WHAT ANYONE CAN DO

Photographs by the author

[EDITOR'S NOTE.—The joyful news that Mr. Burbank has been "endowed" by the Carnegie Institute, so that he may go ahead with his creative work for the next ten years without worrying about the financial side, has called forth a flood of newspaper and magazine articles which are mostly "bosh." These articles have made all sorts of preposterous claims—such as Mr. Burbank himself would, of course, never defend. To say that a thornless cactus good for forage, or any other plant, will flourish from the Tropics to the Arctic regions is manifestly absurd. Moreover, the reporters have invested the whole subject with a most alluring but quite unnecessary mystery. Plant breeders are not "wizards."

As a matter of fact, the mystery exists only in the minds of the reporters. No harm has been done—it is merely amusing—but none of these articles has ever given anyone a definite idea of how to make a variety or what varieties are worth making.

We therefore announce a new department of THE GARDEN MAGAZINE, to be called "Making New Varieties." The following article is the first of a series. It will be followed by such articles as: "How an English Minister Made the Shirley Poppies"; "What Kinds of Lilies the World Really Needs"; "Wild Flowers Worth Improving"; "Important Types of Grapes We Lack"; "Who Can Give Us an Early Sweet Corn with a Long Cob?" "The Possibility of a Perennial Sweet Pea," etc.]

THERE are two distinct phases of plant breeding. The first and fundamental one is "hybridization" or "cross-breeding." This is the process by which we cross two different species or varieties so as to produce



248. Be careful to exclude all but the pollen of the selected plant by removing the stamens. These open flowers are too old. Any of the buds will do. Open, and remove the stamens. (See Fig. 249)

new plants having some of the characters of both parents. The second phase is "selection," the choosing from new plants those that approach nearest to the ideal we are seeking. Most of the improved forms of plants have been produced by selection alone, without any hybridizing at all.

In order to cross two plants you have to put the pollen of one flower on the pistil of another. Everybody ought to know what petals, sepals, stamens and pistils are, but I will take nothing for granted.

The stamen has three parts—the thread-like stalk, or filament, the anthers at the end of the stalk, and the pollen which is borne in the anthers. The pollen is the vital element and, when ripe, is fine, dust-like and often highly colored. Without this pollen no seed can be formed. Fig. 253 shows some typical stamens and their parts. The stamens are usually located just inside of the petals, but in double flowers they are intermingled with the inner rows of the petals if present at all.

The pistil or group of pistils occupies the

very centre of the flower. Like the stamen, it is composed of three parts. The essential part where the seed is borne is at the base, and is called the ovary. Above the ovary is a stalk called the style, and at the end of this style is the stigma or place where the pollen grain must fall in order to form seeds. The stigma is usually knob shaped.

Pollination is the placing of the pollen from one plant upon the stigma of another plant.

Fertilization takes place when the contents of the pollen grain unite with the ovule or contents of the ovary. Until this takes place no seed is developed, no matter how much pollen may be present. Furthermore, only one pollen grain can act.

In order to be sure that its own pollen



249. Removing the stamens before they shed pollen is an imperative first step. Select only young flowers

does not act you must remove the stamens from the flower you wish to bear seed. Of course this must be done before any pollen has been shed.

THE PLANTMAKER'S TOOL KIT

The necessary tools are few—a pair of forceps or common tweezers, or, lacking these, a common steel hairpin, a pair of small scissors, a pocket knife, some twine and some white paper for tags, or the little price tags your dry-goods merchant uses.

A little hand magnifier (shown in Fig. 252) is very useful, and, in some cases, almost necessary.

IMPORTANCE OF A GOOD START

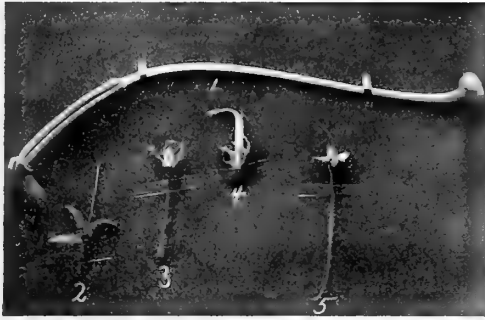
The choice of the plants you are to use is a matter of personal taste. Some people will wish to work with flowers, others with fruits, others with garden vegetables, and some will wish to try various plants. Any simple form will answer.

After the plants are chosen decide what you wish to breed for. Here the field is so broad that the question becomes a purely personal one. In flowers, quantity of bloom, length of blooming period, color, hardiness and such characters are generally considered. The important thing is to have some definite ideal of what you wish to obtain and then work toward that ideal. Indiscriminate breeding may give you some interesting results, but the chances are that nothing of value will be obtained. Don't try to cross plants too far apart botanically. Let the freak hunter try to cross the corn with the milkweed to obtain mush and milk, but don't you so waste your time when there is so much good work to be done. Choose your plants from the same botanical family and, if possible, the same genus. Take some common flower like the geranium to start with. Enough interesting things can be developed in that one flower to occupy you for years.

If the flowers of the plant chosen have both stamens and pistil developed, the



250. When the pistil of the flower selected as the seed bearer is ripe the pollen from the anther of the other selected flower is shed over it



251. The stigmas of different flowers are of various forms. Here are a few: No. 1 is from a lily; No. 4 from a pea. Some are very slender

stamens must be removed from the one that is to bear seed. To do this take flowers in which no pollen has been shed. The half-open ones will usually be in the right condition, but in some flowers, like the sweet pea, the pollen is shed before the flower begins to open, and in such cases very young flowers must be chosen. A little careful observation will decide the question, as the shed pollen gives the anther a fuzzy, dusty appearance. Hold the flower carefully with one hand and, with the forceps, carefully pick off the petals that are in the way. Then pick off the anthers. As there are usually very many anthers be sure that you get them all. Avoid any unnecessary injury or mutilation. If the flowers are in clusters you should pick off all but the ones you wish to pollinate. This will give you stronger flowers and in other ways produce better results.

Since the pollen from other flowers can easily be transferred to yours, protect your flower from foreign pollen immediately after emasculation by covering it with an ordinary paper sack or envelope. Tie this on carefully but firmly. If it is much exposed to water you can oil it with grease or vaseline, but this is seldom necessary.

After removing the stamens wait several days before you pollinate, in order to allow the stigma to become ripe or receptive. The exact length of time depends upon the age of the flower when operated upon—the



252. The plant breeder's tool kit is neither elaborate nor expensive. The magnifying glass is not essential but is a great convenience. Label everything

younger the flower the longer the time you must wait. Here again a little observation will aid you, for, when receptive, the stigma excretes a gummy substance that gives it a moist appearance. This excretion causes the pollen to adhere and aids in the process of fertilization. Both pollen and stigma will remain active and receptive for several days if pollination does not take place at first maturity. Usually two to four days is plenty of time to wait, but if doubtful pollinate twice at an interval of two or three days.

The transference of the pollen may be made in several ways. A common way is to pick the pollen-bearing flower and rub or shake it over the stigma. A more exact way is to pick off a pollen-shedding stamen with the forceps and rub it on the stigma (as shown in Fig. 250). In some cases, where considerable work is to be done, the pollen is collected on dry paper or glass and transferred to the stigmas by means of a small brush. This is the method in the case of strawberries. For accurate work in such cases a new brush should be used for each kind of pollen. The essential thing is that you get a single pollen grain upon a receptive stigma, and that no foreign pollen has a chance to pollinate it. After pollination cover until the seeds begin to form.

RECORDS

When you pull out the stamens tag the flower, and on the tag make the following record: Male parent, female parent, when stamens were removed and date of pollination. In giving the parents, use the symbol ♀ for the stigma of pistil parent and ♂ for the pollen or stamen parent. This tag should remain till the seed or fruit is gathered. As this may be several months, when the record is complete rub the tag with vaseline or grease. Make your record with lead pencil.

When the seed is thoroughly ripe carefully gather it and keep for future planting.

HOW TO MAKE REAL PROGRESS

Seed formation is the last step in the first great phase of plant breeding. For the next phase, selection, no exact rules or directions can be given. Too much depends upon the individual worker and the end he has in view. A few general principles can be given:

First. See that the seed is thoroughly ripe, and in sowing observe the general rules as given in any flower catalogue or garden book.

Second. Give the young seedlings every condition possible for the best growth and carefully note their behavior. In this way you can often tell much as to their thriftiness, habit of growth, etc.

Third. Compare carefully the characters of the seedlings with those of the parents, as this will tell you which ones to select for further work. Sometimes one seedling will be found that will differ markedly from all the others. Give such a seedling the best of care and attention, for it is in this way that some of our finest fruits and flowers have originated.



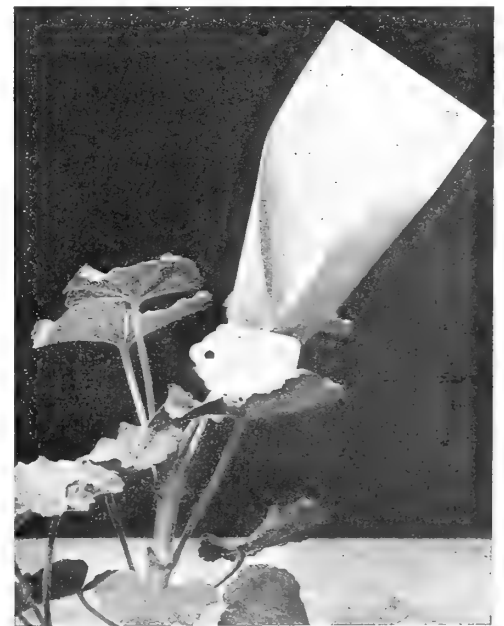
253. Types of stamens. They must be removed from flowers to be cross-fertilized. 1 and 8 lily, 2 apple, 3 pea, 4 geranium, 6 and 8 cobra

Fourth. Keep accurate records and make your work of scientific value. The day is not far distant when we will ask about the parentage of our choice plants as we now do of our favorite animals.

Fifth. Have some definite aim before you and work steadily toward it. Interesting side issues will continually rise to lead you away from your original plan, and only the exercise of watchful care will prevent you from trying to do so much that you will do nothing.

AN AMATEUR'S OPPORTUNITY

I do not think there is any branch of gardening work that offers such a fascination to the amateur, and the charm of the whole thing is that a man with only a small city back yard has equal opportunity with the man owning an acre to produce something good. Some of the most sensational new varieties of both flowers and vegetables, which later become accepted as the standards of merit in their respective groups, have been the results of breeding experiments by amateurs. Then, moreover, if a new plant of sterling merit crowns one's efforts, there is always some opportunity to dispose of it for a good price, a satisfaction independent of that of having attained success in one's hobby.



254. Enclose the flower in a bag to exclude bees after fertilization. Always make a complete record on a label attached to the fertilized flower



255. The European Grapes (varieties of *Vitis vinifera*) must be grown under glass in the Eastern States. For early crops the vines are started into growth in December. The bunches weigh from one to five pounds each, ordinarily, and sometimes more in certain varieties. Grapes require deep, rich, well-drained soil

Growing the Luscious European Grape—By I. L. Powell New York

HOW ANY AMATEUR MAY GROW THE FAMOUS OLD-WORLD VARIETIES WITH THEIR CHARACTERISTIC VINOUS FLAVOR, A FEAT WHICH IS IMPOSSIBLE OUTDOORS EAST OF CALIFORNIA, EXCEPT IN RARE CASES—A PLAN THAT IS ENTIRELY PRACTICAL IN A LITTLE GREENHOUSE COSTING SAY \$500

[EDITOR'S NOTE—The author, Mr. I. L. POWELL, is head gardener to Mr. SAMUEL THORNE, Millbrook, N. Y.]

THERE is a mistaken notion that fruit growing under glass is necessarily a very expensive indulgence. But if the house is there it is just as easy to grow good fruit as it is to produce good roses or carnations, and to many people there will be a good deal more satisfaction in luscious hothouse grapes or peaches than in the flowers. Fruits do not require a great heat unless excessive forcing is contemplated, which is not likely.

Good soil is of the first importance. Good, or at least reasonably good, plants may be grown from poor beginnings if good soil is given them, but poor soil will invariably mean poor plants and poor fruit.

By a good soil I mean one that does not reach any of the extremes of soil consistency. Not sand, clay, muck or humus; but a friable loam containing a fair percentage of all these elements. If your soil is not of such consistency it must be made so. Heavy clay loam

and humus, added to a light sandy soil, will improve it, and vice versa. Soil from a pasture or grass field is preferable, with the sod included, if it is possible to obtain it. To this add about one-quarter or one-fifth bulk of animal manure, prepared at least six weeks beforehand. Mix thoroughly by turning together at least three times. About one-half peck of good bone meal should be added to each cubic yard of compost.

With such a soil either peaches, nectarines, strawberries, grapes or figs can be grown in pots, tubs or boxes. For borders, if the trees or vines are to be planted out, use less manure, say about one-sixth to one-eighth, according to quality. Cow manure is preferred.

The next important thing is careful attention to watering. The soil in the box or pot must be neither constantly saturated nor allowed to get so dry that it is dusty. Other points are: as free circulation of air at all times

as is consistent with the required temperature; houses that are not shaded by any other objects, and the plants themselves so placed that they will receive the full benefit of the sun's rays; a free use of the hose and nozzle, with a good pressure of water (not less than twenty-five pounds to the square inch) on the under side of leaves to control the red spider; a good heating system, and eternal vigilance in all respects. This looks like a lot of bother, but it is no more after all than good gardening always calls for.

One word of caution in reference to watering and syringing, and that is that syringing should be done only when the sun is shining brightly, and generally as early in the morning as possible; watering must be carefully done during periods of dull, cloudy weather if the house contains plants in flower or ripening fruits.

The most commonly glass-grown fruit is

the European grape, and by having several sections of the houses started into growth at various times a succession of ripened grapes may be had from the middle of May or the first of June until the first of the following March. The roots must have drainage, and a naturally well-drained location should be secured if possible. If the situation is at all low or wet, a somewhat elaborate drainage system is necessary. First, a coating of cement two or three inches thick is to be put in the bottom of the border before putting in the drainage. This cement bottom should be given a slope in the same direction as the surface of the surrounding ground and drained at the lower end. The bottom should then be covered to a depth of at least six inches with small stones, broken bricks, etc., over which should first be placed a covering of long straw or other coarse material, and over this one layer of good sod, turned upside down, after which the border may be filled with the compost. If some larger broken pieces of bone are mixed through the compost it may prove beneficial, and the depth of the border should be sufficient to allow at least two feet of compost, and three feet would be better.

If the grapes are to be ripened from the middle of May to the first of August, the structure should face the south. A lean-to or shed roof is preferable, but for the sake of appearance a three-quarter-span house is generally used.

For early ripening it is probably better to have the border entirely inside the house, or, if extended outside the house, it should be on the south side only, should be enclosed by a wall, covered with sash, and have at least one line of heating pipe run through it.

Grapevines for planting out should be strong one- or two-year-old vines that have



256. Grapes may be grown in pots or boxes or planted out permanently in the border. As pot plants they are excellent for indoor decoration. Black Hamburg, the standard variety

been grown in pots, and if for early ripening should be started into growth before being planted in the borders.

VARIETIES FOR SPECIAL SEASONS

The varieties to be grown will be determined by the time when it is required to have ripe fruit. For convenience this is usually divided into three periods, termed early, intermediate and late.

For early and intermediate vineries—*White*: Foster's Seedling, sweet and watery; Muscat of Alexandria, large, hard-fleshed, very aromatic but not so easy to grow; and Bowood Muscat, milder in flavor than the other. *Black*: Black Hamburg, the best known of all the European grapes; Muscat Hamburg, a sort of black muscat; and Madresfield court, very aromatic.

For late—The varieties that I grow are a few Black Hamburg, Gros Colmar, Gros Maroc and Lady Hutt. These are all good keepers. Gros Colmar is ready to cut about December 1st, and is at its best for the Christmas and New Year holidays. The ordinary amateur will hardly attempt to grow late grapes—they are too bothersome—but everyone can succeed with an intermediate crop; and the rich, large vinifera grape, so different from our native kinds, is worth some pains to get.

In December the early vinery must be started into growth, and for early grapes a temperature for the first three or four weeks, or until the flower bunches are well developed, will be required at night, 45° to 50°; day, with bright sun, 55° to 65°. After the flower bunches are developed the temperature may be raised still another five degrees both night and day, and when the flowers are opening it may be raised still another five degrees.

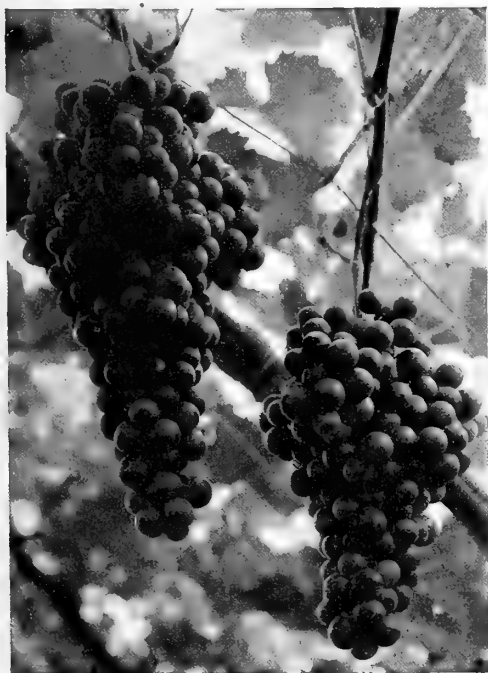
During the flowering period keep the house somewhat drier than before. Often the amateur fails to get grapes because he does not see to the fertilization of the flower. Give the vine a sharp knock during the driest and warmest period of the day, while the flowers are open. The pollen will be distributed sufficiently. The crop will be removed by July 1st, when the borders must be kept dry, especially in October and November.

To have good-flavored grapes at whatever time they may be ripened requires a warm and dry atmosphere. During this period a temperature of 75° to 85° may be maintained during bright days.

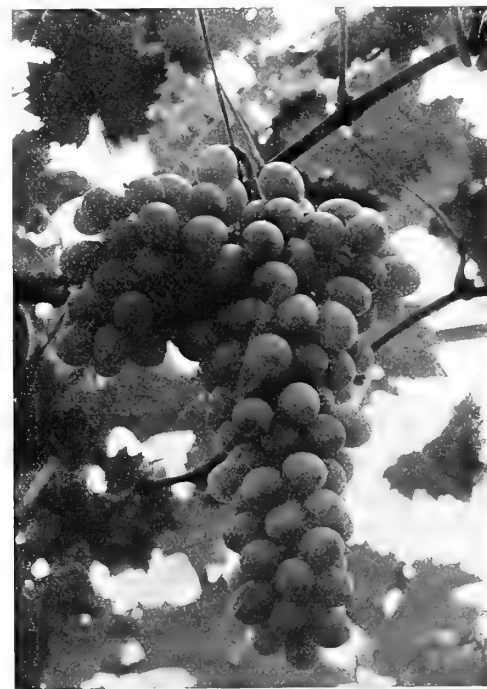
In growing an "intermediate" crop give the same treatment as for the early, except that the drying is not necessary, and that instead of starting it into growth in December wait until the middle of February or even the first of March.

The late vinery should be retarded as long as possible. This is done by tying down the vines near the soil, leaving the side vents wide open (except in severe freezing weather), and placing a boxing over the top and by the side of the vines, thus shutting them off from the heat of the house and leaving them in this position until the growth has started.

The one drawback to grapes under glass is the long wait after planting. The first year's growth should be allowed to extend about half way up to the top of the house to the ventilator, at which point they should be stopped, i. e., pinched back. The second year the vines may be allowed to extend nearly to the ventilator, and the portion of the previous year's growth will produce side growths or "laterals." No fruit can be carried until the third year, when, if all has gone well, from three to five bunches may be allowed to develop on each vine.



257. Gros Guillaume is grown for its large bunches and late keeping qualities. It is good at Christmas. Bunches like these weigh six to eight pounds. Commonly called Barbarossa, but that name belongs to a red grape not now in cultivation



258. The standard of quality is the white grape Muscat of Alexandria. Requires a greater heat than Black Hamburg, and should be in a house to itself



259. The cup-shaped or erect type of lily, *Lilium elegans*, the best of its type for general cultivation. It has many red, orange and yellow varieties

The Incomparable Japanese Lilies—By Wilhelm Miller New Jersey

INDISPENSABLE KINDS FROM THE FAR EAST THAT CAN BE PLANTED IN NOVEMBER—
WHEREIN EACH SPECIES SURPASSES ANYTHING OF THE SAME TYPE FROM OTHER COUNTRIES

Article V. in the series of "Little Monographs"

FOUR-FIFTHS of the important species of lilies are natives of Japan or the Far East, and bulbs collected from the wild or grown in Japanese nurseries do not reach the United States much before the first of November.

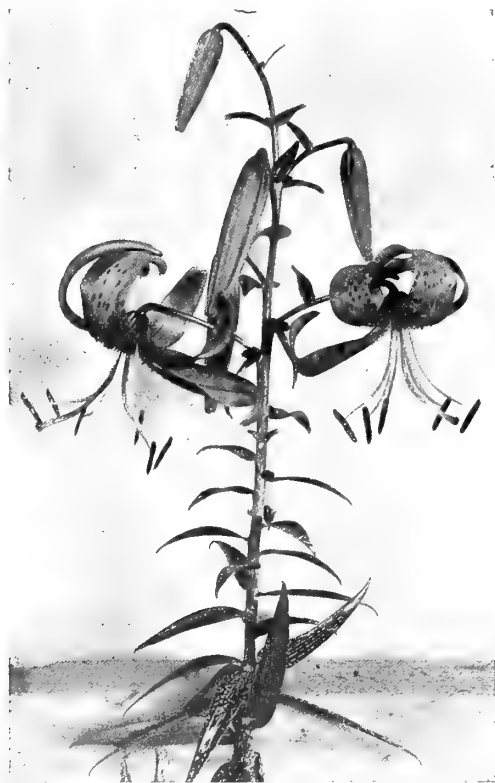
Personally, I believe that October is the ideal month for planting lilies, and I prefer to get American-grown bulbs in October straight from the nursery beds of a specialist, because such bulbs possess live roots, which give them an excellent chance to become established before winter, whereas store bulbs have no roots, and one can hardly expect them to make much root growth in November.

I frankly confess that I have not had enough experience to prove this theory. But a much more important point is sufficiently clear. It is ten times better to plant lilies in November than in the spring. The reason is clear. A lily bulb has nothing like the solidity of a tulip or hyacinth bulb; it is composed of soft, fleshy, loosely overlapping scales, and unless they are stored in a cellar in a very particular way, they lose so much weight and vitality by spring that they often lie dormant a whole year. Many failures with lilies can be traced to spring planting.

There are more than a hundred names of lily species and synonyms in the "Cyclopedia of American Horticulture," to say nothing of dozens of varieties in the catalogues, and in its attempt to classify these the botanical mind has invented a system of subgenera with long technical descriptions, which writers solemnly pass on to the public without realizing that it simplifies nothing, explains nothing, raises no clear-cut mental picture.

But when you come to simmer down the whole thing, you find that lilies are shaped like a funnel, a cup, a bell or a Turk's cap. These forms are illustrated in Figs. 259 to 264.

The funnel-shaped flower is the one that has a long tube. The cup-shaped flower is erect. Reverse the cup and you have a bell-shaped flower. The Turk's cap is a nodding flower with the petals (excuse me, perianth segments)



260. The Turk's-cap type. The tiger lily, the only lily that is really common in gardens. It is the cheapest and most permanent



261. The funnel type. *Lilium Japonicum*, a hardy lily, white inside and pink outside. The best form is known to the trade as *L. Krameri*



262. A rare lily. Broad, heart-shaped leaves (*L. cordifolium*). It is impossible to grow, and less desirable than the giant Himalayan lily (*L. giganteum*)

rolled back so far that the tips almost touch the back of the flower.

I. FUNNEL-SHAPED LILIES

THE BEST WHITE LILIES

The only funnel-shaped lily of the first degree of popularity is the Easter lily (*Lilium longiflorum*). This has the longest flower of any hardy lily—often six inches, sometimes seven inches long. Although commonly called "Bermuda lily," it is native to Japan. It is important to distinguish between the Bermuda-grown and the Japanese bulbs; the former (known to the trade as *L. Harrisii*) are high priced, and are now largely used for Christmas forcing; the Japan bulbs (known as longiflorums) are cheaper for Easter forcing, and it is possible to force them for Christmas by holding the best bulbs for a year in cold storage. How Bermudan greed has killed the goose that laid the golden egg, and how the United States Department of Agriculture has discovered a method of growing healthy bulbs from seed in a far shorter time than could have been believed, is explained in *Country Life in America* for April, 1904, page 508.

OTHER FUNNEL-SHAPED LILIES

There are two other funnel-shaped lilies in cultivation, but they have shorter and wider tubes than the Easter lily, and only one of them has a pure white form.

There is no popular name for *Lilium Japonicum*. It might be called the "Japanese pink lily" or "Kramer's lily," because the commonest form of it in cultivation is the one known to the dealers as *Lilium Kramerii*, though the correct name is *Lilium Japonicum*, var. *roseum*. This flower varies from a blush to deep reddish pink, and the richest color is said to be brought out by growing it on peaty soil. The bulbs cost about twenty-five cents

each, and the Japanese plant them on the side so that they will shed the fall rains, for if water enters the bulbs they are likely to decay. Kramer's lily is white inside (as are all the funnel-shaped lilies) and there is a var. *leucanthemum* which is white outside also, but it is doubtful if it can ever compete with the Easter lily. Kramer's lily normally has one flower on a stalk, sometimes two or three, and the record seems to be seven.

Brown's lily has the distinction of being colored wine-purple or chocolate-brown outside. This alone would hardly induce one to buy many bulbs at fifty cents each, but the flower is said to become seven or eight inches long. *Lilium Brownii* is often considered a variety of *L. Japonicum*, but it is more robust, and has a leafier stalk, bearing three or four large flowers, instead of one. It blooms in July and, unlike most lilies, is said to prefer a light, sandy soil. Try it in a warm, sheltered position and plant the bulb sideways, or be sure that there is a free drainage.

THE TALLEST LILIES

Much rarer than the three species named above are two other funnel-shaped lilies that are interesting because they have large, broad, heart-shaped leaves (lily leaves are ordinarily long and narrow—lanceolate or linear). One of these, *L. cordifolium*, is shown in Fig. 262. It has a white flower, with large violet-brown patches on the lower half of the outer segments. But this Japanese species is not as desirable as the giant Himalayan lily (*L. giganteum*) which bears twice as many flowers (twelve to twenty) and is the tallest of the true lilies, attaining a height of six to ten feet. The flower is white, tinged purple inside and green outside. It would be a notable achievement for some American amateur to grow this lily, and I will gladly pay \$5 for a good photograph of it with a record of successful cultivation.

II. TURK'S-CAP LILIES AND THE LIKE

The botanists make a big distinction between lilies that roll their segments clear back and those which roll back only half way, but there are so many intermediate forms to puzzle one that I shall take a short cut out of confusion by lumping them all in one group, and showing by a "key" how each kind clearly differs from the others.

THE MOST GORGEOUS LILY

The golden-banded lily (*L. auratum*) is by common consent the most gorgeous of lilies, and is a prime favorite in spite of the fact that the bulbs have to be renewed every two or three years. Some philanthropist ought to offer a reward of \$1,000 to anyone who can show how to make them live for ten years in a garden or multiply forever. This is a white lily with purplish spots and of extreme breadth (eight inches to a foot), but the regal glory of it is the broad golden band on each petal which distinguishes it from every other lily.

No other lily varies so much in size, color and season. A hundred bulbs of it will give flowers through a longer period than an equal number of any other lily. It bears anywhere from eight to thirty flowers, and there are a good many cases of fifty to a hundred, but these are freaks, for this species is peculiarly liable to "fasciation," i. e., the growing together of several flower stalks as dandelions sometimes do. The average number—say twenty—is far prettier.

You can have a red band instead of a yellow if you care to pay sixty cents for it, and there are at least ten varieties, varying in price from twenty cents to a dollar.

The English experience is different from ours, for Miss Jekyll, in her charming book on lilies, says that *auratums* are generally at their best the third year.

If you can live without a golden band on



263. The bell-shaped type. *Lilium rubellum*, related to Kramer's lily, but the tube is hardly long enough to make it a funnel-shaped flower. A delicate pink flower. A more permanent species than Kramer's



264. The celebrated *Lilium speciosum*, the most satisfactory pink-and-white lily of the Turk's-cap type. Less showy than the golden-banded lily, but more permanent

your lily petals, you will find *Lilium speciosum* an excellent substitute for *auratum*. Ordinarily it has only half as many flowers (three to ten), but it has the advantage of being cheaper in the end because more permanent. The red form (var. *rubrum*) is one of the six most popular lilies, and Professor Waugh thinks it is the best for all of general cultivation. It blooms in August and September. There are at least seven varieties, of which the best white is said to be var. *Kratzeri*, and the most highly colored var. *Melpomene*.

It is often suggested that the golden-banded lily may be only a natural hybrid of *L.*

speciosum and some other species. The main botanical difference is in the flower stalks, or pedicels, which are long and twisted in *speciosum*, rather short and straight in *auratum*. Both have a charming feature—the inside of the flower is thickly studded with sharp raised points, or excrescences, which make them unique among the lilies here described.

STRONG RED, ORANGE AND YELLOW

We have two series of colors in lilies, the delicate and the strong; the former being white, pink or rose, the latter red, orange or yellow. Any important species in either group is likely to have all the colors of that group, but not of the other. We now come to the tiger lily, which is closely allied botanically to *auratum* and *speciosum* but belongs to the other color group.

The one lily that everybody knows, and the only one that persists for generations in old gardens, is *Lilium tigrinum*. It is so big, cheap and easy to grow that Fashion calls it common and coarse. It is also rather stiff and formal. It has red flowers with purplish spots, and the largest and most brilliant form is var. *splendens*. The tiger lily often has bulbils in the axils of the leaves, which if planted as soon as mature will produce bulbs of blooming size in three or four years of careful cultivation. Another interesting feature is the twisting of the petals as the flowers get older. The bulbs cost ten cents each, which is the minimum among lilies.

The great but unpronounceable Russian botanist, Maximowicz, has a species named after him which may be roughly described as a yellow tiger lily, although it has lemon, orange and red varieties. The world really needs lilies of the tiger-lily type in all the colors. Possibly this species may furnish the clue. The common form of *L. Maximowiczii* is the pale yellow variety, known to the trade

as *L. Leichtlini*. Miss Jekyll says it is only for the skilled amateur; that it comes up too early and needs protection from spring frosts; and that the best soil is a sandy loam, lightened with peat. Mr. Horsford says that there is a reddish-yellow variety that is stronger and surer.

There has been much talk lately about the apricot-colored lily found by the famous collector, Dr. Henry, in western China. *Lilium Henryi* has won the hearts of flower lovers by the soft mellow color of the flower and by its easy, unconventional style of growth, in which respect, Professor Waugh



265. A nearer view of *Lilium speciosum*, showing the beautiful spotting. Flowers often eight inches across



266. The most gorgeous of all lilies (the golden-banded) and unhappily one of the shortest lived

declares, it even surpasses *L. speciosum*. Mr. Horsford says that it is the most vigorous lily he has ever seen, growing six feet high and sometimes bearing twenty flowers from a bulb. Cost, about seventy-five cents.

The formal counterpart to Henry's lily is Hanson's lily (*Lilium maculatum*), but known to the trade as *L. Hansoni*. It has orange flowers and leaves in whorls. The idea of eighty cents a bulb staggers my pocketbook, but this lily is said to be one of the hardiest and thriftiest. It has six to ten flowers in a cluster; the petals are thick and durable. A lily specialist tells me that he has never lost a bulb, and that it has never failed to bloom every year for six years so far.

The best early scarlet lily is the Siberian coral lily (*L. tenuifolium*), which is also distinguished by its linear, scattered leaves, dwarf growth and unspotted flowers. Its only rival is the Grecian red lily (*L. Chalcedonicum*), a much taller plant. Which is easier to grow time must tell. The Siberian is about the only lily that can be quickly and easily raised from seed. This probably means that a colony will run out every five or six years unless you raise a fresh lot from seeds or bulb scales. The bulbs cost about fifteen cents. I should like to see it naturalized on a larger scale among rocks in such a splendid wild garden as that of Mr. Griscom at Haverford, Pa. This species is pictured in the November number of *Country Life in America*. It blooms the first half of June near New York; a fortnight later at Ottawa.

III. THE ERECT LILIES

If the delicate-colored, nodding lilies are the queenly ones, then the kingly lilies are the erect flowers with the strong colors. I have never heard of any good erect lilies in white or pink (such lilies would be desirable), but in red, yellow and orange the best species is clearly *Lilium elegans*, which might be called the "Japanese erect lily." This doubtless furnishes the easiest way to get a big dense mass of strong-colored lilies, and the vividest form of all is probably the variety fulgens, known to the trade as *L. Batemanniae*—an orange or salmon-red flower. This species has more varieties than any other lily. Cloth of Gold and Best Red are said to be the best in their respective colors. The bulbs cost ten to fifty cents, depending on the variety. A good variety, well grown, should have four or five flowers in a cluster and many stems to a bulb.

I see no inducement to grow the Chinese erect lily (*L. concolor*) except as its varieties may bloom at a different season from the Japanese. It has the same color range. They have smaller flowers and make a delicate rather than a strong effect.

WE NEED A GOOD WHITE LILY

Meanwhile, the world waits for a white lily that everyone can grow, for the Easter lily is not reliable when put in the garden after forcing. Let us hope that a strain of the long-flowered lily may be developed that will be reliable in Northern gardens.

The nearest approach to a white lily for

everybody is the Madonna, or Annunciation lily (*Lilium candidum*), which used to be the Easter lily before it was found that the long-flowered lily could be forced more easily. It has a bell-shaped flower, six to twenty-five of them on a stalk, but as it is a European species, and therefore does not belong in this article, I shall only say that it succeeds wonderfully for some and not at all for others, that it is more susceptible to disease than any other lily, and that we do not know whether to plant it deep or shallow, give manure or not, divide frequently or leave alone.

A rival of Kramer's lily is *Lilium rubellum*. This is also a pink, and perhaps it is smaller, but the only safe distinction is in the leaves—those of Kramer's having one nerve, rubellum three. I see no reason for cultivating both unless the season of bloom is different. Peter Barr suggests that this lily be grown in poor, dry soil, under the protecting branches of a deciduous shrub.

THE BEST SPECIES OF OTHER COUNTRIES

So far as I know, the Far-Eastern species named above are the best of their several types that the world affords. California ranks next to Japan; it has produced the best yellow funnel-shaped lily (*L. Parryi*); and its glorious *L. Washingtonianum* is the Pacific coast equivalent of *L. speciosum*. Burbank is said to have hybrids of these that will dazzle the world. They may stun Europe, but no Californian species has ever done well east of the Rockies. The only indispensable lilies that Europe has ever produced are the Madonna lily (the best white garden lily) and the Nankeen lily (*L. tescaceum*), which is possibly a hybrid, and certainly the best pale yellow flower of the Turk's-cap type. The best bell-shaped lily in red, orange and yellow is the Canadian lily (*L. Canadense*).

THE ESSENTIALS OF LILY CULTURE

The key to lily culture is the fact that all the Japanese species and many others form roots above the bulbs as well as below. Above the bulb these roots are sent out laterally from the stem; this explains why lilies suffer so much in summer from drought, because these roots are so near the surface that they are constantly affected by the drying of the soil.

The ideal thing would be to plant lilies four inches deep at first, and after the stems are six inches above ground put on a two-inch mulch of fine leaf mould. If you cannot provide such a mulch, set the lilies six inches deep, but be sure the soil is very fine and mellow. These bulbs demand plentiful water and perfect drainage. If you are not sure the water will drain away rapidly, dig the hole eight inches deep and put in a three-inch layer of sand and broken bricks at the bottom for drainage.

Always put a half-inch layer of sand both above and below the lily bulbs. This will prevent stagnant water at the base of the bulb, which is always a sensitive point, since the roots are emitted therefrom, and it will

also protect the bulbs from the rich soil which should be placed above the bulbs.

Be very careful that no manure ever touches lily bulbs or any other bulbs, as it will make the roots decay. It is very important that the soil above the lily bulbs should be rich, since roots are emitted above the bulb, but be sure that the bulb is separated from this rich soil by a layer of sand.

A three-inch layer of strawy manure makes an excellent winter mulch. For tender kinds use three inches of forest leaves and then two inches of strawy manure, which will keep the leaves from being blown away.

Miss Jekyll recommends that the following should be planted deeply:

L. auratum, including all varieties and the fine Japanese hybrid,

- L. a. Alexandræ*
- L. Brownii* *L. Japonicum*, var. *roseum* (*L. Kramerii*)
- L. elegans* *L. speciosum*
- L. Henryi* *L. tigrinum*

These are all Japanese lilies. She recommends shallow planting for the following:

- L. Canadense* *L. Humboldtii*
- L. candidum* *L. Martagon*
- L. Chalcedonicum* *L. pardalinum*
- L. excelsum* *L. pomponicum*
- L. Grayi* *L. superbum*
- L. Washingtonianum*

These species are native to eastern Europe and America. None of them are Japanese.

A KEY TO JAPAN LILIES

This key shows in the briefest space what no amount of description can ever do, viz., how each species differs from any and all others. The key may be used in two ways: to find out the name of a flower, and to get a grasp of the whole group in the shortest possible time.

- A. Shape of flowers like a cup; fls. erect (Fig. 259).
 - B. Style longer than ovary..... *elegans*
 - BB. Style shorter than ovary..... *concolor*
- AA. Shape of flowers like a bell; fls. nodding or horizontal (Fig. 263). *rubellum*
- AAA. Shape of flowers like a funnel; fls. not erect, unspotted (Fig. 261).
 - B. Leaves broad, heart-shaped... *cordifolium*
 - BB. Leaves narrow, linear or lanceolate.
 - C. Tube not much widened from base to neck..... *longiflorum*
 - CC. Tube considerably widened from base to neck.
 - D. Blossoms pink or white outside..... *Japonicum*
 - DD. Blossoms purplish brown outside..... *Brownii*
- AAAA. Shape of fls. more or less like a Turk's-cap, i. e., the petals rolling far back; fls. nodding (Fig. 260).
 - B. Dominant colors white or pink.
 - C. Petals banded yellow..... *auratum*
 - CC. Petals not banded yellow..... *speciosum*
 - BB. Dominant colors red, orange or yellow.
 - C. Flowers not spotted..... *tenuifolium*
 - CC. Flowers spotted.
 - D. Foliage in whorls; fls. orange. *maculatum*
 - DD. Foliage scattered, not in whorls.
 - E. Lvs. lanceolate.
 - F. Color red..... *tigrinum*
 - FF. Color orange..... *Henryi*
 - EE. Lvs. linear..... *Maximowiczii*



267, 268. Plants that are always perfect are of most use for indoor decoration. Boston ferns, screw pines, rubbers and begonias are handsome at all seasons. Many flowering plants are unsatisfactory when out of bloom and require more light than the foliage plants

Ever Beautiful Window Plants—By Millie F. Lupton New York

WHY THE "DECORATIVE" FOLIAGE PLANTS THAT DO NOT FLOWER ARE SUITABLE FOR THE WINDOW GARDEN, AND THE KINDS THAT ARE EASIEST TO GROW—SIMPLE RULES FOR SUCCESSFUL MANAGEMENT OF INDOOR PLANTS

Photographs by HENRY TROTH

FOR years I grew flowering plants in my windows and had much success, but all the while felt that the work involved was not repaid by the results, for after the blooming period very few of my plants were ornamental. A plant which is always beauti-



269. The best all-round plants for moderately lighted windows are Norfolk Island pine (*Araucaria excelsa*), Boston fern, rubber and the Bourbon palm

ful would be a constant delight so I turned my attention to decorative plants. I believe I thought also that there would be much less work attached. I have learned better than that, but I do feel better paid for my labor.

THE EASIEST PLANTS TO GROW

My first effort was with a small Boston fern (*Nephrolepis exaltata*, var. *Bostoniensis*), the easiest of all decorative plants for indoor culture. If you can't grow a Boston fern do not attempt anything else; it responds readily to care and adapts itself to almost any surroundings. I promptly put mine in a corner where it "looked pretty" and immediately cooked the tender end of each frond—there were only five or six—

because it was too near the radiator, so it was placed in a window to die. But it lived! Imagine my delight when one morning, after poking gently around in the soil with a hairpin, I discovered a number of dainty green heads popping up here and there.

This was eight years ago, and to-day that same plant is still my pride.

A CONTINUOUS SUCCESS

It came to me in an ordinary flower pot, but, as I saw it did not require great depth of soil and did need surface room, I repotted it into fern dishes as its growth required, and nearly every year have had to get a higher pedestal for it to stand on, until now it occupies a sixteen-inch fern dish, which, with the pedestal, stands fifty inches high, and some of the fronds still rest on the floor. The plant has been repotted three times, using a mixture of some wood-earth, some well-rotted barnyard manure and rich garden soil. The only other fertilizer that has been used is ammonia. This I try to put on once a week, allowing one tablespoonful of the ordinary household solution to a gallon of water.

THE TROUBLESOME SCALE

The scale is the only insect that has given any trouble, but as it attacks the old fronds first it is kept under control by breaking off the old fronds as soon as they are infested and picking off the few insects scattered over the rest of the plant. It is not altogether harmful, serving as a warning to remove the old fronds and so put vigor into the new growth.

The last fronds taken off my plant measured sixty-three inches in length, and for

every one taken off five or six new ones seemed to spring up. As the whole plant increased in size the fronds grew correspondingly rugged, the majority of them now measuring all of seven inches across.

CONDITIONS THAT MEAN SUCCESS

A supply of air is most important. Plants cannot do without it at night any better than people can. Each day the weather vane must tell you which window to open or close, and you must be just as willing and ready to rush downstairs in the night to close the window on a pet plant when a



270. A Norfolk Island pine gives variety to the indoor plant collection. Keep it in a moderate warmth, water freely, but don't let water remain in saucer and put away from direct sunshine

sudden storm arises as you would be to cover up the baby. I have given Boston ferns to my friends, who have invariably closed the windows at night or placed the plant on the piazza, where a wind has whipped the fronds to pieces.

All that has been said of the fern applies equally to all other plants. In matters of sunshine and watering the different plants differ in their requirements; although, with the exception of the maidenhair fern, I let them all dry out before watering and then water thoroughly. If you know where and how the maidenhair fern grows out of doors, you will understand why it must never be deprived entirely of moisture so that its fronds wilt. No amount of water will revive them after that, though the roots are not dead; but they must be watched closely and allowed to get as nearly dry as you dare, then water in the saucer. It's a very easy matter to keep the saucer full, but this will not do; the earth becomes sour and moldy and the fronds spindling—they are being kept too wet.

THE PROBLEM OF WATERING

All plants are not thirsty at the same time, so there can be no set time for watering all alike. A sick plant or one that appears to stand still requires water less often than one growing rapidly. Individual attention is a necessity, and care in giving water would save many a plant that dies in our houses.

As often as possible put the plants out doors and shower thoroughly. This is easy enough with small ones, but the large ones get out only twice a year. But none are allowed to get dusty. Indeed, if it comes to a question of dusty plants or unswept rooms let the plants have first consideration, and wait until the wind will carry the dust off the plants if they cannot be moved. My plants are dusted as thoroughly as any other article in the room after the most careful sweeping. If a plant can be promptly washed when swept on of course no harm need come of it, but this is neither always nor often possible—especially in the winter. So I have found it easier for me and best for their health to keep them clean.

SUNSHINE AND LIGHT

It isn't altogether what you do to make plants grow but what you often unwittingly do to keep them from growing that makes for failure. Nothing makes a plant sicken more quickly than to put it away from the direct light to decorate with; that is, to keep it there. The very few times I have attempted this, the fern's appealing look soon reproached me. Yet, when upon occasion one wishes to make use of some plants for house decoration no florist's battered plants ever turn such glad faces to greet the guests or provide such an abundance of clean glossy leaves to fill a vacant corner as do one's own. You will be surprised too, at their number and size, when scattered about the house this way. Then comes the great temptation to leave them there awhile, but don't you do it! You cannot afford to check their growth ever so slightly.

There is a difference between sunshine and light, and the house plants don't really need the direct sun. The palm garden and the east bay window have the morning sun; the music room, though having large south and west windows, is shaded by a wide piazza roof, so it cannot have real sunshine; and the west bay window has the late afternoon

It is often because a plant is unhappy in its environment of light, heat and air that it remains feeble. Don't give up until you have tried all the degrees of variation in these conditions.

Handle the plants gently. I have shuddered sometimes while an admiring friend ran her hands through the mass of foliage



271. This Boston fern has been grown in a living room for eight years. Its fronds get larger each year. Numerous small plants have been started from this one. The rubber has been grown from a small one of three leaves; it is now nine feet high, and is still in the original seven-inch pot.

sun only. Thus all the plants have plenty of direct light, which is all that seems to be required.

The maidenhair fern grows best in a southeast window, where it has the early morning sun and plenty of air—though never in a strong draft where the wind can blow in. When one of my plants looks weak, a visit to one of these windows is always attended by prompt improvement. Unfortunately I have more ferns than southeast windows.

on my ferns, all the time exclaiming about their beauty and explaining how hers won't grow! And the next morning I tenderly remove the bruised and dying fronds and vow to stand between them and my next caller.

Among the "happy" plants besides the ferns (Boston, Piersoni and several of the finer sorts), are *Asparagus Sprengeri*, *asparagus plumosus*, Norfolk Island pine (*Araucaria excelsa*)—five different palms, of which

Latania Borbonica began housekeeping with me twenty-five years ago and is not shown in the illustrations—dracæneas, screw pines (*Pandanus utilis* and the handsomely variegated *Pandanus Veitchii*) and rex begonias, besides other things.

NURSING A SCREW PINE

I had a pleasant experience in feeding back to health one screw pine. In early spring the new leaves were turning very pale—each new one paler than its predecessor. Fertilizer was given, and soon after the first watering results began to show. I had hoped to save the new leaves only, but to my great surprise not only the inside cluster came up a dark healthy green, but the same deep color, starting at the base, began to creep up the full-grown leaves; and it was gratifying indeed to see the pale, sickly color gradually changing to the rich green of full vitality. This plant, taken from the centre of a fern dish four years ago, has made rapid growth and is a truly beautiful specimen. The symmetry of any plant depends on the care taken in turning different sides toward the light, and in doing it often enough.

RUBBER PLANTS NINE FEET HIGH

The often maligned rubber plants grow most successfully. One in my palm garden stands on the floor and grew perfectly straight to the ceiling without losing a leaf. It is now eleven feet tall and has recently put out a branch a yard long, closely clothed with leaves. Until this plant was checked by the ceiling it had never put out a shoot, but grew its nine feet, absolutely erect and without any support, leaved from pot to top. I grew it from a tiny plant of three leaves and it is still in a seven-inch pot.

Another had several short branches when I bought it—a stunted, miserable-looking plant, with a few small or broken leaves. I bathed it and put it in a partially sunny corner, where it promptly began putting out large healthy leaves that soon covered the bare limbs. It now extends the entire length of the room—sixteen feet. Of course it is topheavy, for it is still growing in an eight-inch pot. The pot is tied to the saucer and the plant held erect by strings in various places.

Small pots are necessary for these plants, and they must be kept in the light to their very top. Do not wash the leaves—a careful rubbing on both sides of the leaf with a soft cloth keeps dust and insects off.

THE INSECTS OVERCOME

The only insects that have ever come on these plants were a few thrips. I rubbed them off promptly but lost an araucaria by them. They are most difficult to dislodge. The best preventive for any kind of insect is a warm welcome for the first arrivals—just pick them right off. Sprinkle tobacco dust on the soil occasionally, but do not let it pack and shut out the air. Poke around in the soil now and then—you do that to all plants if you love them.



[We propose to make a radical change in this Department. Nearly all suggestions received from readers heretofore can be classified as follows:

(1) Ideas for someone else to work out; (2) Rainbow painting

There is no lack of subjects. Ideas in the germ are cheap. It is the working out of them that counts.

By rainbow painting we mean letters enthusiastically describing some feat of gardening, but without a photograph to prove it, or any figures.]

Things We Want to Know

WE offer \$5 for the best answers to any of these questions. For conditions see "Personal Experiences".

1. Who can prove whether it is cheaper to buy potatoes or to raise a winter supply for the family on a lot 50 x 150, or larger? Does it pay to rent a vacant lot for the purpose?

2. Who has proved by actual trials what are the best fruits (varieties) for canning?

3. Who has grown fifty or more plants of cardinal flower from seed to blossom?

4. Who can get a picture of the Christmas rose or any other flower that blossoms outdoors at Christmas time in the North? (Please write us now.)

5. Who can tell the most satisfactory experience in picking nasturtium pods?

6. Who has used cover crops, like crimson clover, to enrich the soil of the home garden and prevent the soil from washing?

7. Who has raised four or five different kinds of fruit on the same tree in a city yard with satisfaction?

8. Who has saved his garden for two weeks or a month while others in the neighborhood were spoiled by frost?

9. Who can show a good colony of Galax or Leucothoe in the North?

10. Who can give photographic proof of the truth or falsity of gardener's traditions, such as planting with reference to the moon; whether a potato should be cut to one eye, two eyes or planted whole, etc.?

11. Who can prove that any desirable plant from any point south of Mason and Dixon's line is hardy north of Philadelphia?

12. Who has photographic proof of the advantages gained by inoculating the soil for garden peas and beans?

13. Who has succeeded more than once in growing ixias outdoors north of Philadelphia without glass protection?

14. Who has produced any new variety of fruit, vegetable or flower? (Amateurs only.)

15. Who has established any useful or attractive plant colony, outside his garden, for the public benefit?

16. Who has made money "on the side" by any novel or unusual kind of gardening?

17. Who has established a large colony of trailing arbutus that is increasing by self-sown seed?

18. Who has grown more than a dozen plants of the climbing fern (*Lygodium scandens*) for several years?

19. Who knows how to suppress the chicken nuisance with entire satisfaction, and without neighborhood rows or ugly fences?

20. Who will confess any gardening mistake he has made and corrected, and show "before" and "after" pictures?



The Best Trellis for Tomatoes

A TRELLIS designed and made by ourselves has been so useful that we offer it as a suggestion to others. It is a framework of wood strips, with a crosspiece every foot and an upright every six feet, the whole frame being six feet high and twelve feet long. The strips are two inches wide and one inch thick. The end of each upright is sharpened and driven firmly into the ground. If it is necessary to make it very firm it can be braced or fastened to posts. We have found this trellis especially serviceable for tomatoes, squash and cucumbers. Tie the vines as they grow, using half-inch strips of rag, as string cuts the stem. For heavy fruited vines this is much better than a wire trellis, because they do not become wedged as they do in the meshes of the netting. We put a row of staples, six inches apart, along the strips, so that when it is desirable to make a change of crop we can run garden twine up and down, thus making a very good bean or pea trellis.

The cost of this trellis was nothing, being made from material that had been in use for several seasons. New strips would cost about thirty cents and garden twine five cents. The expense in a small garden is not enough to be a drawback, as the trellis saves, in time, work and space, more than it costs. If painted, the frame ought to last many years. Picking and cultivation are remarkably easy, and the ground room it takes is hardly enough to compute. When raising squash and cucumbers on this kind of a trellis, allowance must be made for covering the first two or three joints of the vines, to resist the borer, before tying them to the trellis.

ALBERT R. MASON.
New York.



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Write to me for my *Autumn Bulb Catalogue*, which contains a full line of *Holland* and *other bulbs* for *indoor forcing* or *outdoor planting*, and over *thirty varieties* of **Hardy Lilies**, and which *Catalogue* is beautifully illustrated and contains much cultural direction—*it's free*.

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Monstrous pure white flowers, thickly studded with crimson spots. Each petal marked with a wide gold band. *This beautiful Lily* attains a height of about five feet, and has been known when planted out to bear *over one hundred blossoms* on a stem—but, of course, this is exceptional. Like all Lilies, *Lilium Auratum* should be *planted deep*. It is *perfectly hardy* and succeeds anywhere grandly, also when planted among beds of Rhododendrons, shrubbery, etc.

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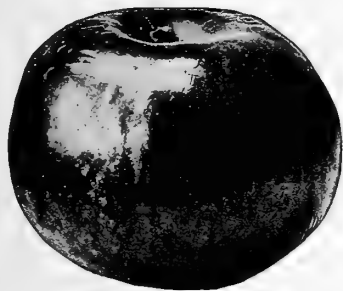
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Or suppose you have an acre of unused land, is there anything that you can plant on it that will require as little work and attention as an orchard? As an example of what can be done, we might mention one of our customers, who netted this season \$14.00 from one four-year-old Elberta Peach Tree! An acre contains a hundred trees. Another customer netted \$8.00 from one ten-year-old Yellow Transparent Apple Tree. An acre at this rate would yield a profit of \$800! Still another cleared \$200 from one acre of Strawberries. These are just three out of a score of instances we might mention.

Believing that there are many readers of THE GARDEN MAGAZINE who would take advantage of an opportunity of planting an orchard at the low prices at which orchardists purchase stock, we make the following attractive offers:

- | | | | |
|---|---------|--|---------|
| For a One-Acre Peach and Apple Orchard | | For a One-Acre Plum and Peach Orchard | |
| 50 Elberta Peach Trees, fine one-year-old stock | \$12.50 | 50 Elberta Peach Trees | \$15.00 |
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| For a One-Acre Apple Orchard | | For an Acre of Strawberries | |
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Any other varieties of the fruits included in these combinations may be substituted for those listed. Those mentioned, however, are the most popular varieties among the orchardists, who naturally select the best for yield and quality.

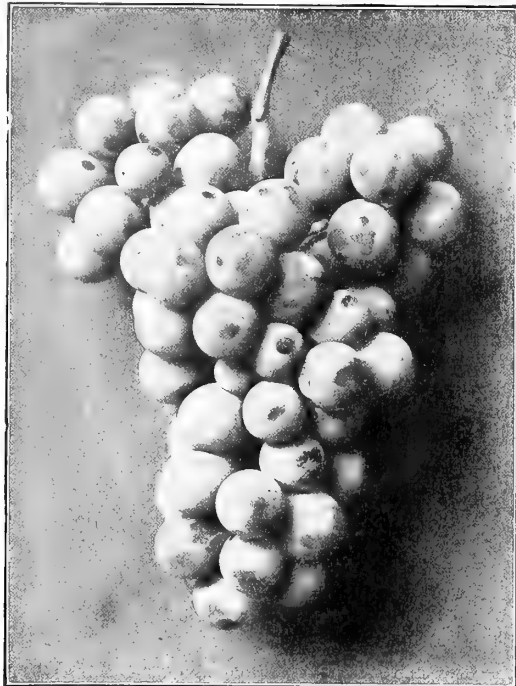
These low prices are possible because we are one of the largest growers of fruit trees in America, having more than a thousand acres in our nurseries, and sell to the large orchardists of the country in carload lots. We frequently sell for single orchards from fifty to one hundred thousand trees.

The trees in the above offers are all fine stock, and are just what we supply to the commercial orchardist. This stock is grown in the rich Maryland soil, and is perfectly hardy in severe Northern climates.

We shall be glad to advise any reader of THE GARDEN MAGAZINE relative to the planting of an orchard, whether large or small, and suggest other combinations than those offered above. Write us today.

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Wintering Tender Plants in Window Boxes

PERHAPS the best, most serviceable and artistic way to winter tender plants is in window boxes, placed inside the window and about six to twelve inches from the glass. The box may be expensive or otherwise, as desired. So far as the plants are concerned any box will do, provided it is well drained, but by all means have it made to fit the window. Paint it on the outside any color appropriate to the surroundings. It should be six to eight inches wide and six inches deep, with several holes drilled in the bottom for drainage. A tray or tin pan of a corresponding size should be provided to catch the water that soaks through, but the box should not be set down tightly into this. Allow enough space all round to admit free circulation of air. Small blocks of wood about an inch thick placed in the bottom of the pan will elevate the box sufficiently. The failure in growing house plants often rests upon inattention to this simple requirement. All healthy growing roots require an abundant supply of oxygen. When a flower pot or window box is left to stand in water half the time, the circulation of air is stopped and the roots are suffocated. I believe that this one thing is responsible for more deaths of house plants than any other neglect or mismanagement.

A neat and inexpensive means of supporting the window boxes is on brackets placed about two inches lower than the window sill. Drain the bottom of the box with about an inch of broken flowerpots, charcoal or any rough material, and fill up with good soil.

PLANTS FOR SUN OR SHADE

In a sunny window begonias will give abundant satisfaction, in such varieties as *Vernon*, *Erjordii*, *gracilis*, *magnifica*, *Vesuvius*, *metallica*, *coccinea* (*B. rubra*), *manicata*, *Duchartrei*, *incarnata* and others. Begonias of the *semperflorens* type (i. e., *Vernon*, etc.) that have been planted out of doors can be taken up, with as much earth adhering as possible, and planted in such a box. The arrangement can be suited to one's own taste.

Rex begonias are also suitable for such a place, and will make a beautiful box, either alone or with other subjects.

Geraniums are also suitable for a sunny window. Old geraniums do not lift (transplant) well, and it is always best to start with young stock.

Ferns of the *Bostoniensis*, *Piersonii* and *Scotti* types (varieties of *Nephrolepis exaltata*) are suitable for either sunny windows or those that are only partly shaded. But it is better to have them in pots rather than in boxes, as they are then more conveniently handled.

For a shady window nothing is equal to the shield flowers or parlor palms (*Aspidistra lurida* and *A. lurida* var. *variegata*). They keep their foliage under the most adverse conditions, and succeed with less attention than any other plant I can think of. They will grow almost anywhere. In a shady

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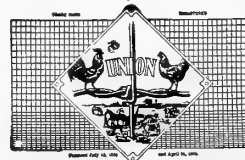
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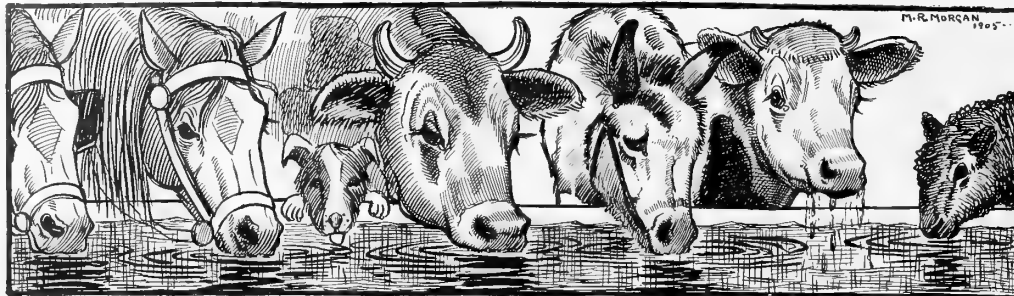
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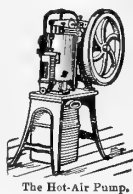
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The California Garden in November

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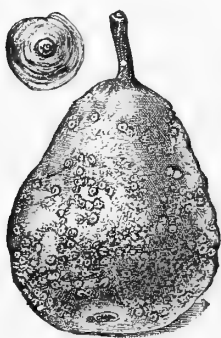
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RULES

1. All communications entered for competition should be written on one side of the paper only, and to consist of not more than three hundred words.

2. Papers must be sent to the secretary of the Garden Club of Philadelphia, Mrs. C. L. Borie, Rydal, Pa., before February 1, 1906.



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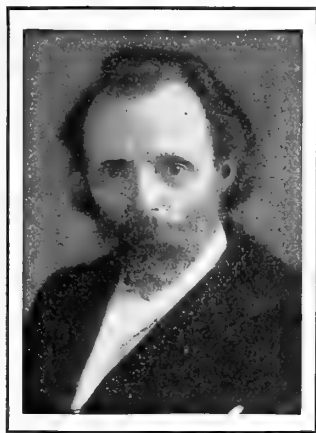
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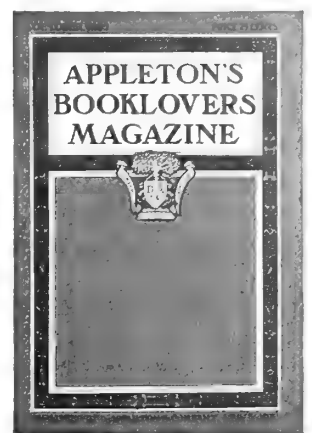
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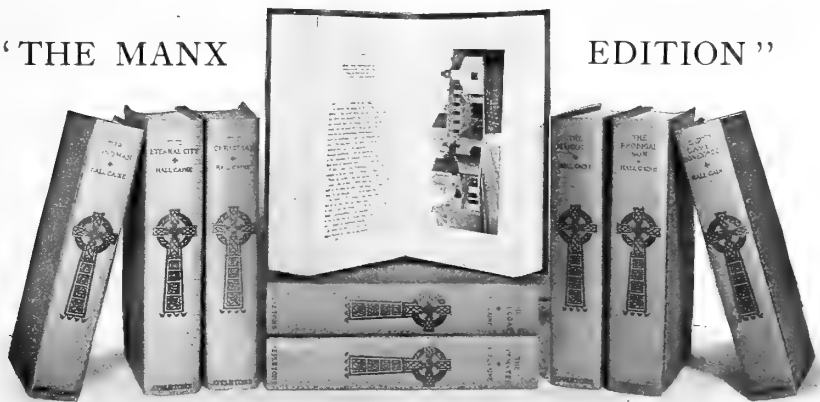


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A Bulb That Blooms in August Without Any Leaves

HALL'S amaryllis (*Lycoris squamigera*), formerly grown as *Amaryllis Hallii*, is a rather uncommon, hardy bulbous plant with attractive foliage and bright flowers. As will be noticed in the illustrations, these do not appear at the same time. The leaves, some three to six to a bulb, are fully grown here in April and entirely disappear in June. About the middle of August the flowering



272. A singular bulb that comes out of the naked ground in August. Hall's amaryllis (*Lycoris squamigera*) bears a cluster of rosy lilac, fragrant flowers, each three or four inches across

stems appear, make rapid growth, and are soon furnished with a cluster of amaryllis-like flowers, white, flushed with pink, with a bluish hue (or perhaps bright rosy lilac would best describe them), and very attractive, also fragrant.

This bulb seems to have been originally brought from China by Dr. George R. Hall, of Bristol, R. I., in the late sixties, and was introduced by a Boston florist, but apparently not very extensively, as it seems to be unknown outside of New England.

Later supplies have come via England, with several other species of the family, but none of them appear to be hardy here except *L. sanguinea*, a small-flowered kind with a muddy, dried-blood color, not very effective and not especially desirable.

The Chinese *L. aurea* is seemingly the

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handsomest one of the family in flower, but I have not succeeded in blooming it, after several trials. Unlike most bulbs, it is said to require constant moisture, greenhouse treatment, with special warmth at the right season.

L. radiata (*Nerine Japonica* of the catalogues) seems to be the best known Lycoris, many having been imported with other Japanese plants in recent years.

New Jersey.

J. N. GERARD.



273. The foliage of Hall's amaryllis, which appears in spring, disappears in June, and is succeeded two months later by naked flowers

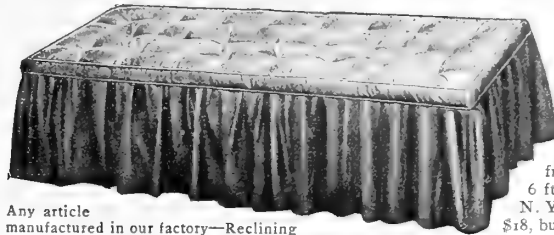
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274. The grape hyacinth, a charming little blue or white flowered bulb, which should be planted in the fall (*Muscari botryoides*, var. *alba*)

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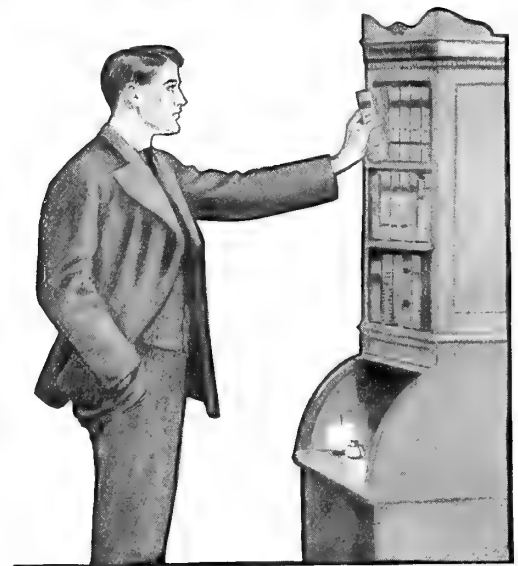
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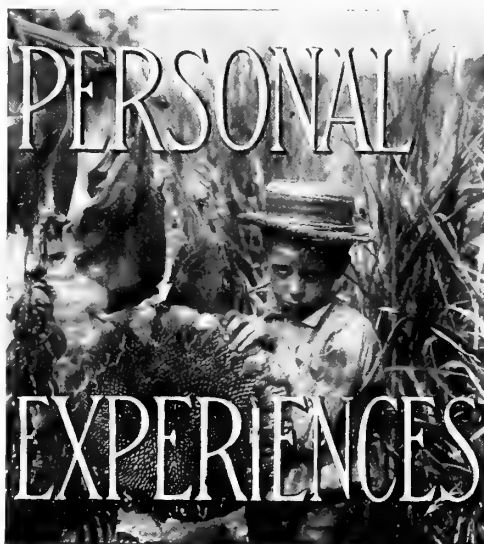
ture, which represents a white form of *M. botryoides*, gives a fair idea of the various species, which have clustered bell-shaped flowers constricted at the throat. They vary as to size of clusters, leaves and stems, and in coloring. The most common form, *M. botryoides*, has, in the type, dark blue flowers, as have also *M. Armeniacum* and various other species.

The handsomest species, in my judgment, is *M. Szovitsianum*, whose flowers are of a light "bird's-egg" blue, a color not common among flowers, nor is the species plentiful.

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THE GARDEN MAGAZINE  COUNTRY LIFE IN AMERICA  THE WORLD'S WORK
DOUBLEDAY PAGE & CO NEW YORK

The Long Evening Time



IF there is any month when a publisher may ask for serious attention to the announcements of books on which work has been going on for a year, or perhaps several years, it is during November. The booksellers of the country have been generous in their orders this fall, and all of the books described below are to be found in all good book-stores in the United States. We ask our readers to look at the publications which attract them at their local book-stores; or, if out of reach of a book-store, the books will be sent direct from our office at the prices indicated, except in the case of *net* books, when an extra charge for postage is made. For purposes of convenience, the list is alphabetically arranged:

Bolles, Albert S. The Home Library of Law

A book of legal information for the use of every intelligent citizen; full, yet compact; not too technical, but accurate. *Six volumes*, \$9.00; sold by subscription.

Brainerd, Eleanor Hoyt Concerning Belinda

A volume of delicious humor—a chronicle of the Youngest Teacher's experiences in a fashionable New York girl's finishing school. *Second printing before publication*. By the author of "The Misdemeanors of Nancy." Illustrated. \$1.50.

Capen, Oliver Bronson Country Homes of Famous Americans

This sumptuous volume takes the reader into the country homes of nearly a score of our most famous men of the past—such as Washington, Emerson, Clay, Lee, Longfellow, Greeley, Madison, Whittier, etc. Not only is it valuable for its historical and personal interest, but for its many suggestions in home-making as well. Profusely illustrated from photographs. Net, \$5.00. (Postage, 30 cents.)

Chesnutt, Charles W. The Colonel's Dream

"Keen knowledge of human nature, warm sensibilities, real power, all these are manifested in this fine novel, to which a young and finally happy love affair gives added interest."—*Chicago Record-Herald*. \$1.50.

Schillings, C. B. With Flashlight and Rifle

A most important work—the only authorized American edition
A remarkable record of adventures in Equatorial East Africa while photographing wild lions, rhinoceroses, giraffes, zebras, leopards, elephants, and other dangerous animals. Mr. Roosevelt has written the author a congratulatory letter commenting upon the work. 300 almost incredibly clear and startling photographs. Net, \$3.80 (?). (Postage, extra.)

Goodwin, Maud Wilder Claims and Counterclaims

By the author of "Four Roads to Paradise," "White Aprons," etc. *The New York Times* says: "Its unique plot, its life-like characters, its brilliant execution in both dialogue and movement, are all crowned by a novel's *raison d'être*—its absorbing interest." *Second printing*. \$1.50.

Haggard, H. Rider Ayesha

By the author of "King Solomon's Mines," "She," etc. A thrilling story of two faithful companions and their hair-raising adventures in the mountains of Tibet while in quest of Ayesha, the immortal—Spirit of the Mountain. Eight drawings by Greiffenhagen. *Third printing before publication*. \$1.50.

Harriman Alaska Expedition Scientific Volumes

Elaborately illustrated with plates, many in color and photogravure, and text cuts. Volumes I. and II. (narrative—together). Net, \$15.00. (Postage, 60 cents.) Volumes III. to XIII. (the latter volume ready immediately), each, net, \$5.00. (Postage, 30 cents.) Volumes VI. and VII. ready later.

Holtzoper, E. C. The Country House

This volume gives competently and in detail, yet without technicalities, all the information necessary in the building of a country house. Nearly 300 illustrations. Net, \$3.00. (Postage, 30 cents.) *Ready early in November*.

Irving, Washington Rip Van Winkle

Elaborate holiday edition, with 50 colored illustrations. Mr. Arthur Rackham, A. R. W. S.—the illustrator of this luxurious work—has a richly humorous imagination and a unique power of quaint invention, which is equally strong in its appeal to child and adult. In "Rip Van Winkle" he has caught its very spirit, and has interpreted anew all its "old-fashioned grace and elfin playfulness." Net, \$5.00. (Postage, 25 cents.)

Jacob, Violet

By the author of "The Interloper," etc. A volume of fairy tales which shares the same story-telling faculty and admirable literary workmanship which characterized the author's successful novels. Illustrated by May Sandheim. Net, \$1.25. (Postage, 13 cents.)

Lancaster, G. B.

Not since Mr. Kipling's tales first electrified the world do we remember so startling a volume of stories by an unknown writer. It is full of the zest of life's hardships. \$1.50.

Lyle, Eugene P., Jr.

This story, of a Confederate trooper who had an Emperor for his rival, is one of the few romantic novels that have a real reason for existence. Fifth edition put to press eight weeks after publication. *The New York World* calls it: "Pre-eminently an American book." Charmingly illustrated. \$1.50.

Mabie, Hamilton W.**Myths Every Child Should Know**

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The Golden Heart**Rogers, Julia E.**

This book, which took five years' work by author and photographer, has many features that no other book has. It tells the uses of trees; the care of trees; the value of trees; the preservation of forests. The 350 extraordinary photographic illustrations by A. R. Dugmore show bud, blossom, full leaf, fruit, and the wood of all the important species. Sixteen plates in color. Net, \$4.00. (Postage, 34 cents.)

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Warner, George H.**The Jewish Spectre**

An extraordinary and brilliant study of what the Jew really was and is, and what he has contributed to the large idea of universal brotherhood, which Mr. Warner holds to be the basis of true progress. Net, \$1.50. (Postage, 15 cents.)

Watson, James**The Dog Book**

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White, Mary**The Child's Rainy Day Book**

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Woolson, G. A.**Ferns, and How to Grow Them**

Uniform with "Roses, and How to Grow Them." An authoritative little hand-book, dealing with the growing of hardy ferns, both in the garden and indoors. Profusely illustrated. Net, \$1.00. (Postage, 10 cents.) *Ready early in November.*

Wright, Mrs. D. Giraud**A Southern Girl in '61**

(Daughter of Senator Wigfall of Texas)

This book is alive with the intense individuality of the author and throws new light upon the social history of the Confederacy. "Mrs. Wright's volume combines real historical value with a rare feminine charm."—*Chicago Record-Herald*. Illustrated. Net, \$2.75. (Postage, 28 cents.)

Last Spring's Popular Books:

Adams, Frederick Upham**John Henry Smith**

By the author of "John Burt" and "The Kidnapped Millionaires." A romance of outdoor fun—particularly golfing and automobiling—with pleasure-seeking millionaires. Forty drawings by A. B. Frost. \$1.50.

Brudno, Ezra S.**The Little Conscript**

By the author of "The Fugitive." "Mr. Brudno has something of the pitiless power of the great Russian novelists. . . . His work deserves generous recognition."—*Review of Reviews*. \$1.50.

Comstock, Anna Botsford**How to Keep Bees**

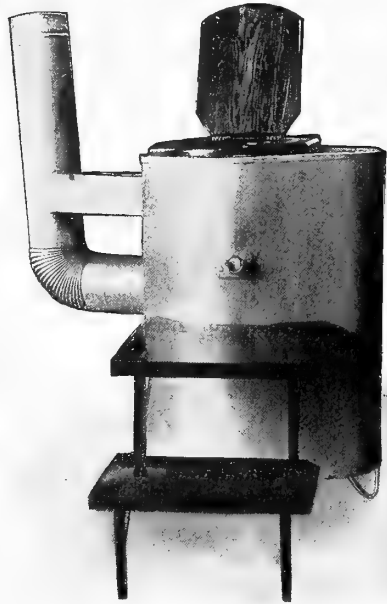
A charmingly written manual in which the outfit, first steps and methods are given clearly and in detail. Many photographic illustrations. Net, \$1.00. (Postage, 10 cents.)

Dixon, Thomas, Jr.**The Clansman**

"The Leopard's Spots" was a great book, but this is a greater. The South owes a debt of gratitude to its author."—*The Atlanta Journal*. Illustrated by Keller. \$1.50.

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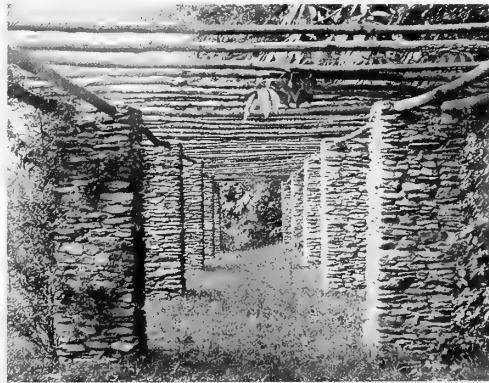
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A Pergola from Left-overs

A PERGOLA built entirely from left-overs is one of the most stately and attractive of any in our neighborhood—a neighborhood displaying many characteristic forms of this popular Italian method of decorating the home grounds. An unsightly pile of rough stone, the remains of a mortar bed, a bank of sand, and an immense pile of tree branches resulting from the removal of three big trees that stood on the site of the new home, provided an abundance of material, but offered very little promise of beauty or stateliness for pergola building until the constructive ideas of the home builder were centred upon the left-overs.

The stone pile consisted of discarded foundation stones and the rough, flat slabs of field stone removed from the ground in digging the cellar of the new house. These thin slabs were piled in rough but symmetrical fashion to form square piers about two feet thick, sunk about two and a half feet below grade, and standing seven and a half feet above the ground. Two or three bushels of



275. A pergola can be easily made from the left-over stones of the house builders for the piers and cedar beam poles for the top. Plant light vines for the top and put lilies along the sides between the piers

lime and an extra load of sand were necessary for adding to the old mortar bed. This being the only material required in addition to the left-overs (and two days' work from a stone mason the only extra expense), the ingenious owner, who devoted much of his spare time to its construction out of business hours, found occasion for special pride in its small cost as well as in its attractiveness.

The piers stand in pairs, eight feet apart across the path, with ten feet from pier to pier along the path, thus making the pergola of six pairs of piers extend fifty feet in length. In the building of the piers a plentiful supply of mortar was used in the foundations and in the centres of the piers above ground, but the stone slabs were carefully selected for the outer surfaces, and arranged in such manner that they are kept securely in place without visible mortar. This contributes to the rough effect that is the most striking and desirable characteristic.

The left-over tree branches provided a most appropriate finish for "tying" the piers across the top. The straightest branches of sufficient length were selected and trimmed to uniform length without removing the bark. Two of these were laid lengthwise between



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hold 100 to 150 feet of line, take small space, quickly removed when not in use. Make a neat and tasty appearance, last a life-time.

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| 4 Tulips, Single Scarlet | 6 Oxalis, Buttercup |
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COLLECTION No. 2. Price 50c. (Postage 20 cts. extra.)
 FOR OUTSIDE PLANTING AND SPRING FLOWERS

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| 2 Hyacinths, Red | 6 Tulips, Single Mixed |
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made of galvanized wire, to take the place of the old-fashioned insect-harboring, decaying, wooden supports. It means not only economy to private or market growers, but superior quality, greater quantity.

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| Two rings, per doz. | \$0.40 |
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You also need some **Tying Wire** which does not rot or untie. No. 18, galvanized, 12 lbs. for 85c. No. 19, 12 lbs. for \$1.

The **IGOE TOMATO AND LARGE PLANT SUPPORTS** mean a more abundant crop of Tomatoes of superior quality, and more beauty and success of your heavily flowered plants, such as Peonies, Dahlias, Golden Glow, Chrysanthemums, etc. Same style as Carnation



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JAPANESE BARBERRY

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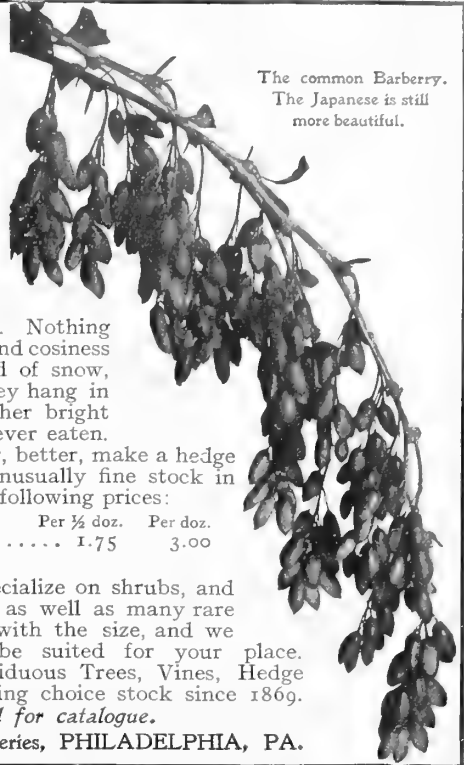
Why not plant a group near the front steps? Or, better, make a hedge across the front of your grounds. We have an unusually fine stock in heavy plants that have flowered for two years at the following prices:

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1½ to 2 feet	\$1.10			
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Let us make you up a shrubbery plan. We specialize on shrubs, and have a splendid assortment of the best varieties as well as many rare kinds. Send us a rough plan of your grounds, with the size, and we will gladly suggest the shrubs that will best be suited for your place.

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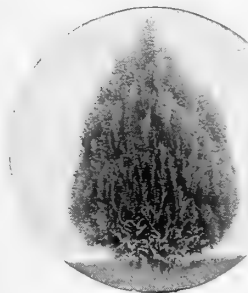
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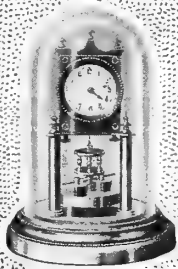
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	Each	Doz.	100
L. Auratum (Golden Queen Lily) large bulbs	\$.08	\$0.85	\$6.00
L. Longiflorum, pure white trumpet, large bulbs	.08	.85	6.00
L. Spec. Rubrum, white, rosy red spots, large bulbs	.10	1.00	8.00
L. Spec. Nelpomene, white and deep ruby red, large bulbs	.12	1.25	10.00
L. Spec. Album, pure white, reflexed petals, large bulbs	.12	1.25	10.00
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L. Candidum (Madonna or St. Joseph's Lily), extra mammoth bulbs	.15	1.25	8.00
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L. Philadelphicum, yellow, maroon spots	.10	1.00	7.00
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L. Wallacei, rosy to apricot tinted	.10	1.10	8.00

Our "SEPTEMBER BULB OFFER" is also repeated this month.

You may yet plant the beautiful bulbs we offered September before the frost comes, or plant them for winter flowers indoors. A remarkable window garden collection for \$1.00. (See September GARDEN MAGAZINE, page 7, for list of this collection.) Send us only a dollar bill if you want it.



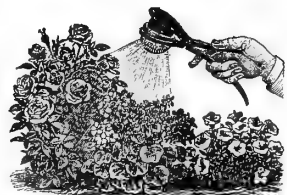
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Spraying for insects and dust, it reaches every part of the plant over and under the leaves, where insects live and breed. Spraying with a few drops of ammonia in the water or tobacco soap suds will surely kill the insects and help the plants to bloom. It is used effectively on rose bushes and all shrubbery in the flower garden.

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each pier, with the top stone work built over them to prevent slipping; and on this double-branch support other straight saplings were laid across the pergola, from ten to twelve inches apart, to form a rustic roof.

Such a pergola might be constructed at slight expense where there are no left-overs to supply the bulk of the material, wherever the soil of the home grounds is rocky; as the rough field stone is quite as satisfactory as picked quarry stone, when proportions and construction are on stately lines. Good larch poles are the best material for the rustic roofing, as the hard wood withstands the weather, and the long branches are comparatively straight. **PHEBE WESTCOTT HUMPHREYS.**

Pennsylvania.



Make Chili Sauce of Your Surplus Tomatoes

ANY rule for pickle that gives small enough proportions to use up the odds and ends of vegetables, as they accumulate, is a useful addition to the family cook book. This recipe for chili sauce, which originated in our own family, calls for vegetables that are to be found in any garden at this season, and in such quantities as can be conveniently handled with other work. A jar or two, made every few days during the tomato season, will give a good supply for winter use.

Three quarts mashed ripe tomatoes, six medium-sized green peppers, four white onions, one heaping cup of sugar, one-half cup of salt, two cups of vinegar, one even tablespoonful of cinnamon, one-eighth teaspoonful cayenne pepper, one-half even tablespoonful cloves and allspice mixed.

Skin the tomatoes before mashing. Chop the peppers and onions, but it is not necessary that they be chopped very fine. If the pickle is wanted quite sweet more sugar will be needed. Unless the vinegar is sharp, more may be required to make it sour enough. Use ground spices in each case. Boil slowly for three hours. This will make between one and two quarts when finished. The same rule makes good catsup if six cups of vinegar instead of two are used. This sauce can be made any time of year that green peppers are in market by using canned tomatoes, and is, of course, less trouble than the other way. We have made our pickle according to this rule for a number of seasons, and it has always kept perfectly until we used it up the following summer. It has also met with great approval on the part of our friends.

I. M. ANGELL.

How to Grow Narcissus Paper-White Grandiflora in Water



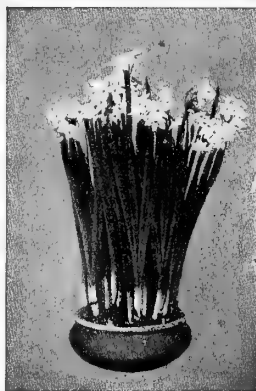
GROWN IN SOIL

A VERY unique, simple, and novel way to grow this variety of Narcissus is to place six or eight bulbs in a shallow glass or china bowl with water. Support the bulbs with pebbles or gravel as you would the Chinese Sacred Lily bulbs; place the bowl in a dark place until the roots have started, when you should bring them to the light. Keep the bowls filled with water and the bulbs will take care of themselves. You will have a beautiful and luxuriant display of delightfully fragrant flowers in a short time—in fact within six weeks after planting if desired. The flowers are nearly two inches across, a dozen or more in a cluster, and are in no way inferior to those grown in garden soil. A number of bowls planted in succession of two weeks apart will give a beautiful display of flowers all winter.

PRICE

50 cents per dozen;
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Delivered free anywhere in the United States



GROWN IN WATER

STUMPP & WALTER, Seedsmen, 50 Barclay St., New York

Catalogue of fall bulbs for outdoor and indoor planting mailed free

For Fall Planting

We offer practically all the best new and old varieties of Fruit and Ornamental Trees, including a splendid collection of Evergreens, Shrubs, Vines, Hardy Roses, Herbaceous Plants, etc.

Send us your list of probable wants for special quotations, and ask for our complete catalogue

The great care we take in the grading and packing of all orders is certain to meet with the complete approval of all who receive shipments from us. It costs us more to do this way, but we want to make permanent customers of those who favor us with a trial order.

The Elm City Nursery Co.
New Haven, Connecticut



HARDY POMPOM CHRYSANTHEMUMS

Make Your Grounds Beautiful

(B. & A. SPECIALTIES)

Phlox. In our Nurseries are growing upwards of fifty varieties, covering the most striking colors, from the most delicate pink to the most brilliant scarlet, from the purest white to the richest purple. The plants will give a profusion of bloom next summer. Special, \$1.25 per 10; \$10 per 100.

Hardy Chrysanthemums. This is the true old-fashioned kind. We have them in all colors. You can never tire of this flower, blooming in October and November when all others are dead. Special, \$1.25 per 10; \$10 per 100.

English Pot Grown Grape Vines for Indoor Culture.

We import a large quantity and can give special prices. Call and inspect our Vines in season.

Blue Spruce. Five thousand specimens, including several hundred **WEeping SPECIMENS.** Such a collection cannot be seen in any other Nursery in the world. Call and see them.

Ask for our new Fall catalogue.

BOBBINK & ATKINS

Nurserymen and Florists

RUTHERFORD, N. J.

The Best Decorative House Plant

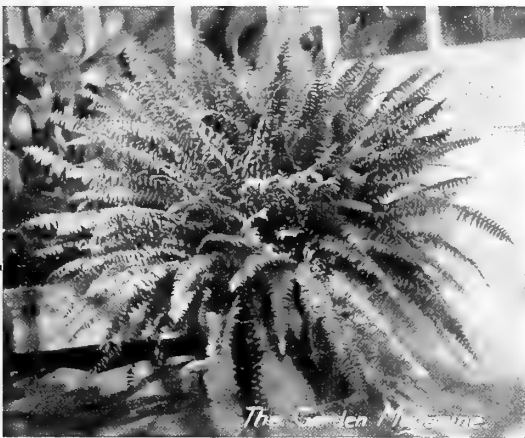
The Improved Dense Growing Boston Fern

GOLD MEDALS

New Orleans and St. Louis (The Shaw Medal and World's Fair, St. Louis.)

HIGHEST AWARD

Chicago, Ottawa, Toronto.



SILVER MEDALS

Philadelphia; Newport, R.I.; Boston; New York Florist Club; American Institute; and Society of American Florists.

☐ The *Nephrolepis Scotti* introduced last year, and a member of the Boston family (*Nephrolepis*), is universally recognized by the florists of this country as a great improvement over the Boston Fern.
 ☐ It is as strong as the Boston, but more compact. ☐ It makes a more bushy and luxuriant growth. ☐ It makes three times as many fronds as the Boston in a given time. ☐ Its comparative hardiness (being able to stand the trials of indoor growing), its beauty and compactness, make it without question the best decorative house plant.
 ☐ It being my own introduction, I have an especially fine stock of strong, well grown plants. WRITE FOR PRICES.

I am also Headquarters for DECORATIVE PLANTS of all kinds.

JOHN SCOTT, East 45th Street and Rutland Road, **BROOKLYN, N. Y.**



The Garden Magazine.

HARDY FLOWERS

Strong field grown clumps planted this autumn will be established and ready to afford a wealth of bloom earlier in the Spring than if you wait till April.

Send for attractive folder price-list of the best old fashioned sorts. Order early.

At the Westbury Nurseries one may choose everything for the complete planting of a place. We would call special attention to our stock of splendidly grown, heavily rooted *shade trees, flowering shrubs, and evergreens.* Then to our specialty: extra size nursery trees 15 to 30 feet high, grown 8 to 25 feet apart for perfect development. Then choose the great spreading shade tree, 12 to 20 inches in diameter and 25 to 50 feet high, that completes the picture.

Our catalogue, "Trees for Long Island," opens a new field in horticultural knowledge.

ISAAC HICKS AND SON

(EDWARD HICKS, HENRY HICKS)

Nurserymen and Scientific Tree-movers

Westbury Station,

LONG ISLAND, N. Y.

Poultry, Kennel and Live Stock Directory

Information about the selection or care of dogs, poultry and live stock will be gladly given. Address INFORMATION DEPARTMENT, THE GARDEN MAGAZINE, 133 East 16th St., New York

GEDNEY FARM POULTRY YARDS

S. C. Buff Orpingtons White Wyandottes
S. C. Black Minorcas

Yards stocked with birds of the most noted prize-winning strains in America. Old and young stock for sale, of all varieties for breeding or exhibition. 2,000 to select from.

FRANK W. GAYLOR, Manager; White Plains, N. Y.



Two Good Hardy Vines

VINES offer the best means of getting quick effects near buildings, and make a garden look more really worth while the very first season. Plant annual vines at first until the permanent vines grow up sufficiently. For screens, too, where some unsightly object is to be hidden, use vines on trellises while the permanent shrubbery is attaining proper size. For temporary hedges use vines. Long stretches of green are never monotonous and some of our vines have showy flowers besides. There are very few buildings which are not improved by having vines planted lavishly about them. The same amount of luxuriant growth cannot be had in any other class of plants at so little cost. Vines are for everybody. A five-cent packet of morning glory seed will accomplish wonders.

The most popular rapid-growing vine is Boston ivy (*Ampelopsis Veitchii*). No other hardy climber seems so perfectly adapted to the covering of brick walls. Its clinging tendrils find easy anchorage on any masonry. It has wonderful variety of leaf—ranging from tiny heart-shaped leaves half an inch in length to huge trefoils three inches across. The young shoots and the undivided leaves they bear are so different from the woody stems and fissured leaves of older growth that the effect is that of two vines of different habits springing from the same root. For frame houses, Boston ivy is almost too luxuriant unless used on trellises. The dense blanket of its foliage, shutting out the sun, may even keep the walls damp. In the fall it changes from green to bright scarlet.

The native Virginia creeper (*Ampelopsis quinquefolia*) is as well suited for use on wooden walls as is Boston ivy to masonry. In some respects, the Virginia creeper—or woodbine, as is better known throughout the North Central States—is more picturesque in this growth than the Boston ivy. The tendrils of the latter catch on every projection within reach and draw the stems down to form as flat a surface as the wall beneath. The tendrils of woodbine, fewer in number and demanding more obvious anchorages, allow the vine to assume all sorts of characteristic and irregular forms.

Woodbine and Boston ivy seem to be equally hardy north of the Ohio River. Both are showy in the fall and retain their red foliage until well into November. Between them there is little to choose save that the Virginia creeper requires support, where the Boston ivy finds or makes its own way. Boston ivy spreads its mantle of green over the walls almost from its roots, while woodbine is more capricious in some cases, flinging out creepers only at intervals until it is well up the walls.

Winnetka Collie Kennels
MEADOW FARM
Winnetka, Illinois
The home of present and future
COLLIE CHAMPIONS
They have taken
146
First and Special Prizes since January, 1902
PUPPIES and GROWN STOCK FOR SALE

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How we raise and prepare squabs for market. Prices. Profits. Care of Breeders. Details of management in the most perfectly equipped Squab Plant in the world. Ten cents.
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and when you buy them ask for PLYMOUTH ROCK SQUABS, which are the largest and best. Squabs are raised in the most perfect manner. We were the first—our books, breeding methods and famous Plymouth Rock big thoroughbred Homers revolutionized the industry. Visitors welcome at farm; correspondence invited. First send for our Free Book, "How to Make Money with Squabs," and learn this profitable business. Ask also for new printed matter.
PLYMOUTH ROCK SQUAB CO., 339 Howard St., Melrose, Mass.

For Sale—Rough Collies

Dogs and bitches, grown and puppies, will be sold cheap. For further particulars address M. Bullocke, 85th St. and 2nd Ave., Fort Hamilton, Brooklyn, N. Y.

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MAJOR G. M. CARNOCHAN
NEW CITY, ROCKLAND CO., NEW YORK (N. Y. office 44 New St.), offers young puppies either wire or smooth haired to be shipped as soon as weaned. DOGS \$15, BITCHES \$10. This is an excellent opportunity to obtain the Cairnsmuir blood at very reasonable prices. Purchasers should send cheque with order, stating sex and variety. Grown dogs and older puppies for sale at all times. Also Welsh terriers.



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The ideal dog for the home—as a watch dog, as a companion and for sport. Noted for intelligence. Larger than a fox terrier, rough coated, with a constitution of iron. The hardest dog alive. Death to rats and other vermin. We ship to all parts of the country and guarantee safe delivery.

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Send for illustrated, descriptive circular of the handsomest, gamest, and most reliable of all breeds of dogs, the AIREDALE TERRIERS.



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COLNE KENNELS
Petite Cote, near Montreal Canada

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HIGH GRADE BULBS and SEEDS
for Fall Sowing. Mailed Free

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Professional assistance in the selection of Live Stock.

I have bought and sold fine animals in almost every State in the Union.

Horses, Cattle, Sheep, Swine, Poultry

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Poultry Supplies

The right supplies go a long way toward making poultry more profitable. You'll find our various "Vigor" Foods great helps. All other leading foods and supplies and Cyphers' Incubators and Brooders.
Write for our free Illustrated Poultry Supply Book—a very helpful book.

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191-5 Water St. New York City
Agricultural Implements for Field and Garden

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We have complete outfits for residences of any size, summer homes, camps, hotels, schools, launches, yachts, etc. Every detail included; very best material; absolutely practical. So simple no electrician required. Light all the Time, as storage battery included. Gas, Gasoline or Steam engines used give plenty of power for pumping water, sawing wood, refrigeration, etc. We would like to send every reader of THE GARDEN MAGAZINE who is likely to be interested our new 60-page Catalogue describing over 130 different outfits. Address: Lighting Department
RICHARDSON ENGINEERING CO., Hartford, Conn.

BAY STATE NURSERIES

W. H. WYMAN, North Abington, Mass.



Hardy Ornamentals, Shade and Evergreen Trees

in great variety

HARDY RHODODENDRONS, ROSES SHRUBS and VINES

OUR HERBACEOUS DEPARTMENT contains nearly one thousand varieties of Hardy Perennials, new and old:

Paeonies, Phlox, Iris, Hardy Asters, etc.

1905 Catalogue Free

OWNERS OF COUNTRY ESTATES are particularly invited to get our prices.



The Garden Magazine

The Beautiful Japanese Anemone

A HARDY flower of rare charm that will grow in any location, either in sun or shade, and flowers profusely during September and October, when most flowers are gone and the garden looks dead. Without question the Anemone is the best hardy fall flower after the phlox and before the chrysanthemum. Its blossoms are either pure white or an exquisite shade of pink, and, massed against a dark background, makes a strikingly beautiful effect for the Autumn garden. Moreover, the Anemone is excellent for cutting and will furnish flowers for the house in great abundance. Can be grown in any good garden soil. We have exceptionally fine plants this fall. Strong one-year-old, just the size to set out now. The Queen Charlotte, with its large pink flowers, is especially beautiful.

- PINK**
 SINGLE—A. Japonica. Carmine with yellow center. | **DOUBLE**—A. Japonica Queen Charlotte. Flowers a beautiful and pleasing shade of pink, semi-double, *very large*, fine for cutting.
- WHITE**
 SINGLE—A. Japonica alba. Fine large white flower. August to November. | **DOUBLE**—A. Japonica Whirlwind. Flowers pure white.

Price \$1.50 per dozen. \$10 per hundred
 We strongly recommend you to plant Anemones. They can be planted with entire safety during November until the ground is frozen—the sooner, of course, the better. **Catalogue on request.**

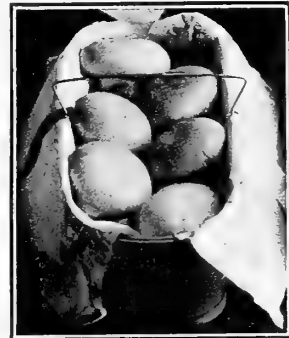
J. B. KELLER SONS

Growers of Hardy Perennials 1023 South Ave., Rochester, N. Y.

Now is the Time to Transplant

Bear in mind that trees, shrubs and hardy plants succeed best if planted in the Autumn.

Send for the illustrated catalogue of the famous Dwyer Fruit and Ornamental Shade Trees, Shrubs, Roses, Creeping Vines and Small Fruits. We have on hand a full line of hardy, vigorous, acclimated stock grown in our own nurseries, guaranteed true to name, free from disease; sure to grow and give satisfaction. We do **Landscape Gardening** in all its branches. *Our Catalogue mailed free. Write to-day.*
 T. J. DWYER & CO., P. O. Box 4, Cornwall, N. Y.



12 Mushrooms, 4 lbs., from "Tissue-Culture Pure Spawn."

MUSHROOMS

Cornell Experiment Station got two pounds of mushrooms per sq. foot of bed with

"Tissue-Culture Pure Spawn"

You can do equally as well if you use the right kind of spawn. Our illustrated booklet is sent free. Tells all about it.

Pure Culture Spawn Co. Meramec Highlands, Mo.

New Hybrid Perpetual ROSE

Frau Karl Druschki

New Hardy White Rose, most important Novelty of recent years. Beautiful in bud and, when fully developed, vigorous and a continuous bloomer. We can supply field grown plants. Send for New Catalogue describing this and other Novelties and Specialties for Fall Planting. Address

ELLWANGER & BARRY

Nurserymen—Horticulturists

Drawer 1044 A C ROCHESTER, N. Y.

WINDOW GARDENS WITHIN EVERYONE'S REACH

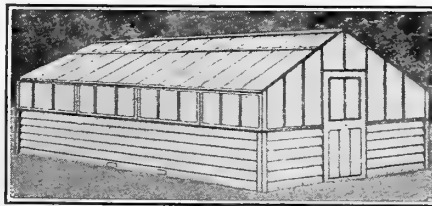
Do you know that the possibilities of a window garden are, in a measure, as great as those offered by a conservatory? A window garden will not only give you growing flowers all winter with plenty for cutting, but it will enable you to have a number of fresh vegetables in spring a fortnight or more before your neighbors. In an incredibly small space you can start little boxes of Tomato, Cucumber, Celery and other vegetables, as well as flower seeds for setting out early in the spring, which will fill your garden with annuals in June, whereas annuals sowed outdoors would not bloom until July, and vegetables, of course, suffer a corresponding delay.

ARTISTIC WINDOW GARDENS

made in sections all fitted and ready for erection on arrival, in plain or tinted cathedral glass.

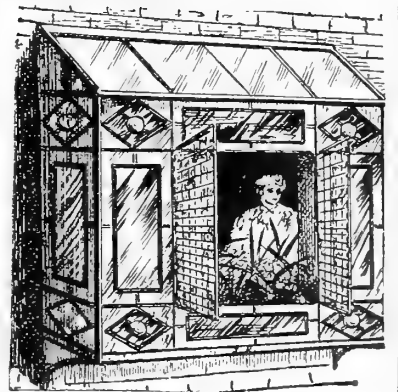
PRICES FROM \$5.00 UPWARDS

These window gardens are as architecturally beautiful as they are practical and will give distinction and tone to any house.



Premier Greenhouse, length 12 ft., height 8 ft., width 8 ft. Complete with plant tables. Price \$63.00.

particulars of size and requirements desired. You can have flowers in abundance for Christmas if you order at once.



GREENHOUSES FOR AMATEURS

Greenhouses from \$20.00 Conservatories from \$50.00

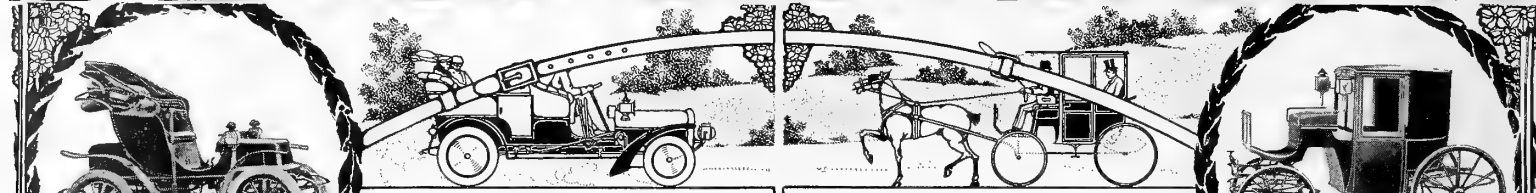
These small, practical greenhouses embody the essentials of the large structures, giving all the pleasures and profit possibilities of the large and expensive greenhouses.

Vineries, Orchid Houses, Garden Frames, Hand Lights, Portable Buildings, Summer Cottages, Hunting Lodges, Auto and Boat Houses, Portable House-Boats, Studios, Workshops, etc Designs and estimates free.

Prompt shipments can be made. Order now, sending full particulars of size and requirements desired. You can have flowers in abundance for Christmas if you order at once.

C. H. MANLEY, - Premier Mfg. Works, St. Johns, Mich.

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THE Studebaker Automobiles appeal to motorists who are capable of judging mechanical excellence in every part from original design to the smallest point of workmanship. In these days of hastily made automobiles the name Studebaker offers absolute assurance of reliability. The graceful lines, the easy operation, the accessible mechanism of a Studebaker, are of minor importance to the strong feeling of confidence which the name Studebaker gives.

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Write for complete catalogues. Prompt delivery assured on early orders.

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IT is not necessary to be an authority on carriage quality in order to make selections from the Studebaker warerooms. Studebaker styles are standard and cover the widest possible range of modern vehicles. Studebaker vehicles are the choice of those who seek elegance of carriage equipment as well as those who are thoroughly competent to appreciate their fine points. Appropriate harness and accessories are always kept in stock at Studebaker repositories.

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New York City, Broadway and 7th Ave., at 48th St. Portland, Ore., 330 to 336 E. Morrison Street
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Local Agencies Everywhere

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The Garden Magazine.

Phlox for Fall Planting

STRONG FIELD-GROWN PLANTS, to flower profusely next summer. ASSORTMENT OF SHOWY, DISTINCT, BEAUTIFUL VARIETIES OF VARIOUS COLORS.

THE PHLOX is hardy, vigorous, and easily grown in any good soil with ordinary care. Its flowers are attractive and brilliant, and appear in profusion in mid-summer and early autumn, when the garden needs to be enlivened with bright colors. Once planted the Phlox does well for three years, then the plants should be divided and replanted. We recommend the following effective varieties:

Coquelicot—fiery red; Henri Murger—white, carmine center; La Vague—silvery rose; Lothair—rich salmon; Pantheon, pink; Parachute—purple; Pharaon—light purple; Richard Wallace—white, violet center; William Robinson—salmon, rose center.

Send for booklet containing descriptions of novelties and specialties (both fruit and ornamental) for fall planting, also description of the exquisite, new, hardy white rose, Frau Karl Druschki.

ELLWANGER & BARRY, Nurserymen, Horticulturists
Drawer 1044 A. C., ROCHESTER, N. Y.

For October and November Planting

The plants named below will give abundant bloom next season. We offer heavy clumps of these and other hardy perennials.

Phlox—Elegant varieties; heavy plants, both upright and creeping, early and late blooming.

Peonies—Superb varieties; very large clumps.

Iris—Heavy clumps, either named or in mixture.

Japanese Lilies—One of our specialties; large bulbs in the best and hardiest varieties.

Hyacinths, Tulips and Daffodils planted in October and November make a magnificent show in April and May. Extra selected sizes of the best varieties.

We offer also a full line of other hardy stock, including Roses, Shrubs and Trees, both fruit and ornamental, many of them in extra sizes.

CATALOGUE FREE

S. G. HARRIS, Tarrytown, N. Y.



Plant Ferns Now

Your attention may wisely be given at this season to the planting of our Hardy Ferns.

WE OFFER FIFTY KINDS

suited for every position and condition. If you have a shaded nook or corner, ferns will very naturally grace it; or a dry, open, barren plot, ferns will make it attractive and beautiful. Send for Gillett's fern and flower catalogue, which will tell you much about their cultivation.

EDW. GILLETT

Southwick Nurseries

SOUTHWICK, MASS.

NEVER SLIPS
nor TEARS

EVERY PAIR
WARRANTED

Substitutes

May be Offered You to
Increase Dealers' Profits

The Velvet Grip

INSIST
ON HAVING
THE
GENUINE

Sample pair, Mer. 25c. Silk 50c.
Mailed on receipt of price.

CUSHION BUTTON

HOSE SUPPORTER

LOOK FOR THE NAME
ON EVERY LOOP



GEORGE FROST CO., Makers,
Boston, Massachusetts, U. S. A.

MUSHROOM GROWING

The COMING
INDUSTRY

Demand Exceeds Supply

Perhaps it has never occurred to you that there is an industry affording large profits on the investment which is practically undeveloped in this country—one that requires but small capital and can be enlarged to vast proportions and successfully conducted summer or winter in any part of the country. There **is** such an industry and it consists of **Growing Mushrooms.**

Mushrooms are one of the finest delicacies of the table, and hotels and restaurants are never able to supply the demand for fresh mushrooms and for this reason are obliged to serve the canned article, which is comparatively tasteless. The regular market value of mushrooms ranges from 40 cents to 75 cents per pound, according to the quality, and anyone can raise the choicest varieties by buying the right spawn (seeds) and caring for the mushroom beds in accordance with directions.

One does not hear much of mushroom culture, for the reason that those engaged in it do not talk about it for fear of encouraging competition. Of late, however, the large daily papers and some of the magazines have printed articles on the opportunities offered in this field, and a few are beginning to take advantage of them.

A MOTORMAN MAKES \$1500.00 A YEAR

The Chicago Tribune, in its issue of December 18th, 1904, contained an account of a motorman in that city who started in a small way raising mushrooms in his cellar. It proved so profitable that the following winter he rented a warm cellar under a livery stable, and worked in it at spare moments growing mushrooms. He retained his street-car position and reaped earnings of \$1500.00 a year from the mushroom beds. This simply illustrates the wonderful opportunities in this line of work. What this man has done any one can do, and by devoting more time to the industry the profits, of course, become greater.



HOTEL MANAGER'S INVESTMENT

Joseph T. McCormick, proprietor of the Willmore, Winber, Pa., writes us July 22: "The spawn I bought from you is surely fine. I cut six pounds nearly every morning. I had one mushroom that weighed almost 9 ounces. Am pleased very much for my first attempt. I am going to put down 4 or 5 more beds. I could sell all I have if I cared to; but use them myself." Mr. McCormick paid \$2.00 for his spawn and is cutting at least \$3.00 worth of mushrooms nearly every day, and the bed will bear for about three months. Isn't that a great investment?

NO SPECIAL BUILDING REQUIRED, COST, ETC.

The impression that in order to grow mushrooms it was necessary to erect very expensive special buildings, or find a warm, deep, dark cave or specially constructed cellar, has probably been created by the mushroom growers who desire to monopolize this wonderfully profitable business. Any cellar, basement, shed, abandoned outhouse or waste space can be made to fairly bristle with mushrooms. It might be well to mention right here that a mushroom bed, by absorbing the moisture in the atmosphere, makes a cellar more healthful.

As regards expense, you can make down a bed of 100 square feet, the spawn of which would cost not over \$6.00; such a bed will produce daily over 10 pounds of mushrooms for a period of from 60 to 90 days. In other words, your \$6.00 investment will net you not less than \$5.00 per day after the growth begins. It requires very little more work to take care of a bed five times as large. In fact one person could manage a space of 5,000 square feet, if it could be obtained. Of course failures can be made in growing mushrooms, for there are always some people who cannot make a success of anything; but anyone who will carefully follow instructions will find it as easy to successfully grow mushrooms as they would to raise the average vegetables.

Bear in mind that no matter how many mushrooms you raise a ready market for them may always be found. Hotels and restaurants will contract in advance for your entire output.

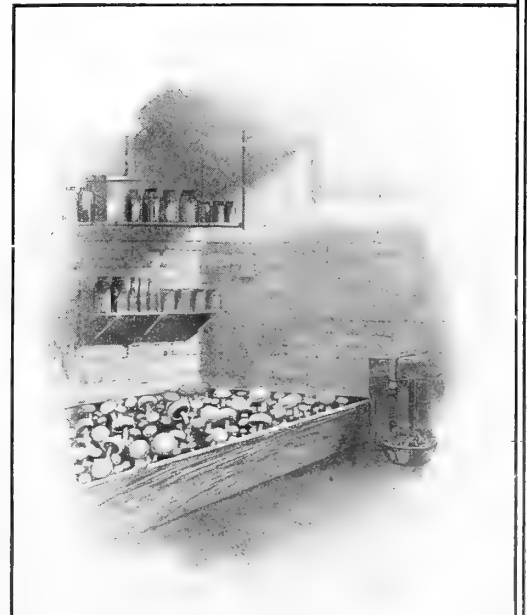
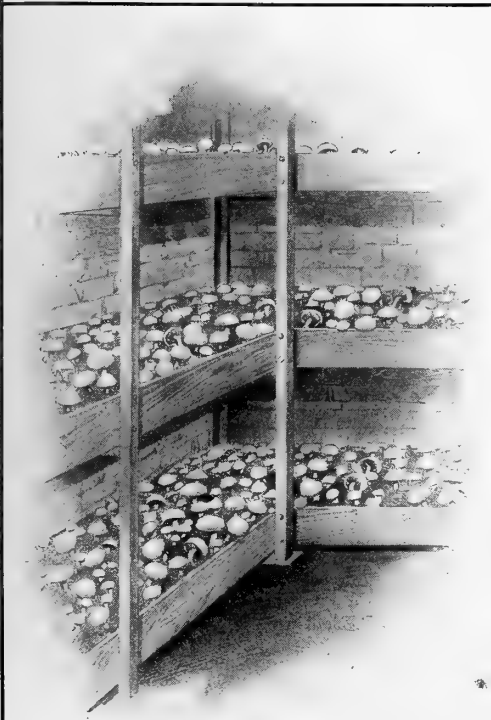
OUR SPAWN GUARANTEED

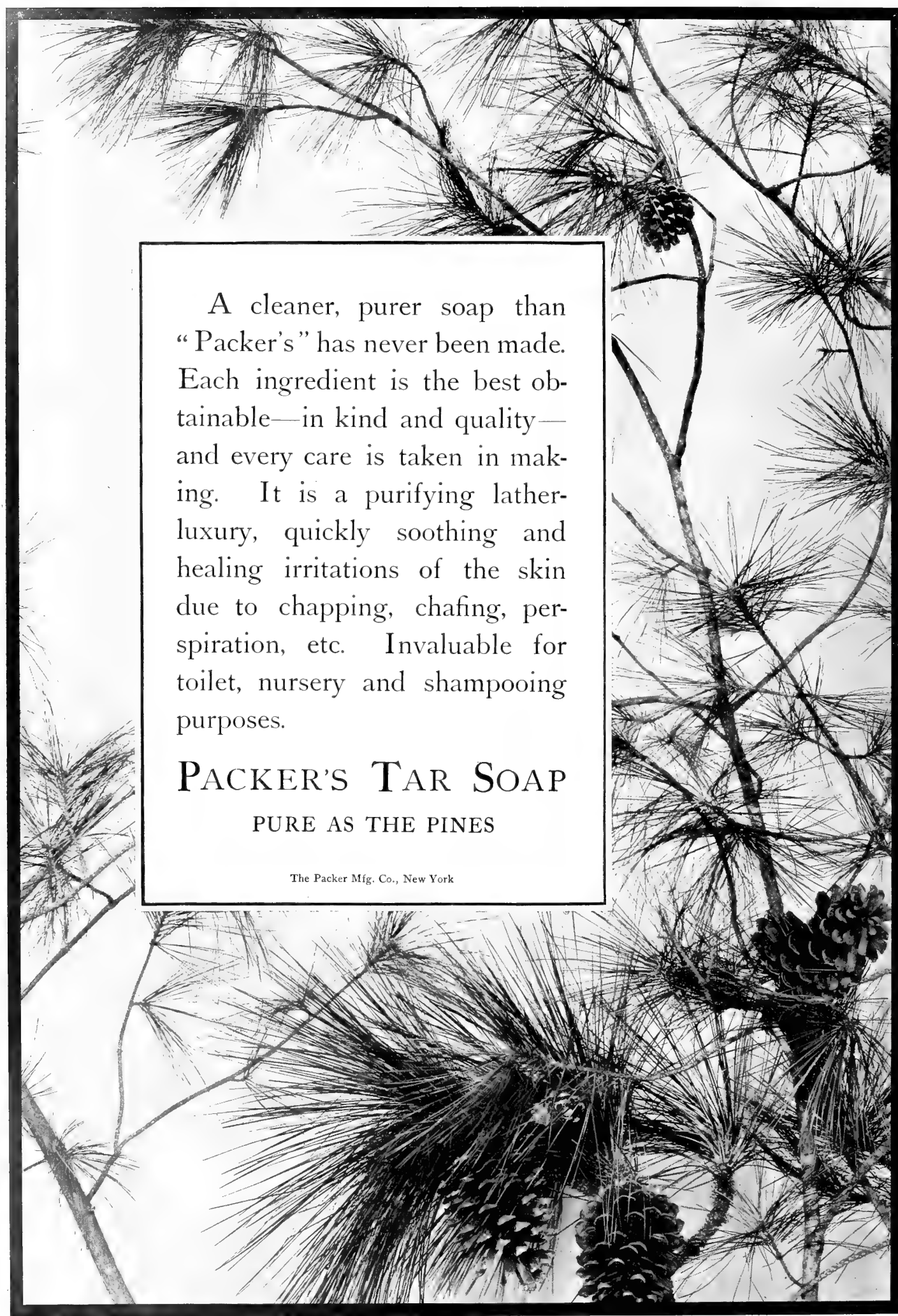
Unless you buy good spawn you cannot expect the best results. We handle three varieties and guarantee all of them. In other words, we will replace any of our spawn which fails to grow. We furnish spawn sufficient for a bed of 100 square feet at the following prices: U. S. Special, \$6.00. Imperial, \$5.00. French-English, \$5.00. A smaller amount may be purchased if desired. Over \$8000.00 has been spent in laboratory work on the U. S. Special, bringing it up to the highest possible standard. Write us for our free book, which tells you all about our varieties, gives full instructions for making beds, and shows you how to start in this paying industry. We will also send you extracts from U. S. Government Report.

Full information will be sent you free.

U. S. SEED CO.

218 Odd Fellow's Building, St. Louis





A cleaner, purer soap than
“Packer’s” has never been made.
Each ingredient is the best ob-
tainable—in kind and quality—
and every care is taken in mak-
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luxury, quickly soothing and
healing irritations of the skin
due to chapping, chafing, per-
spiration, etc. Invaluable for
toilet, nursery and shampooing
purposes.

PACKER'S TAR SOAP

PURE AS THE PINES

The Packer Mfg. Co., New York

The long-needle Southern Pine (*Pinus palustris*) from which is obtained the pine-tar used in Packer's Tar Soap.

DECEMBER

1905

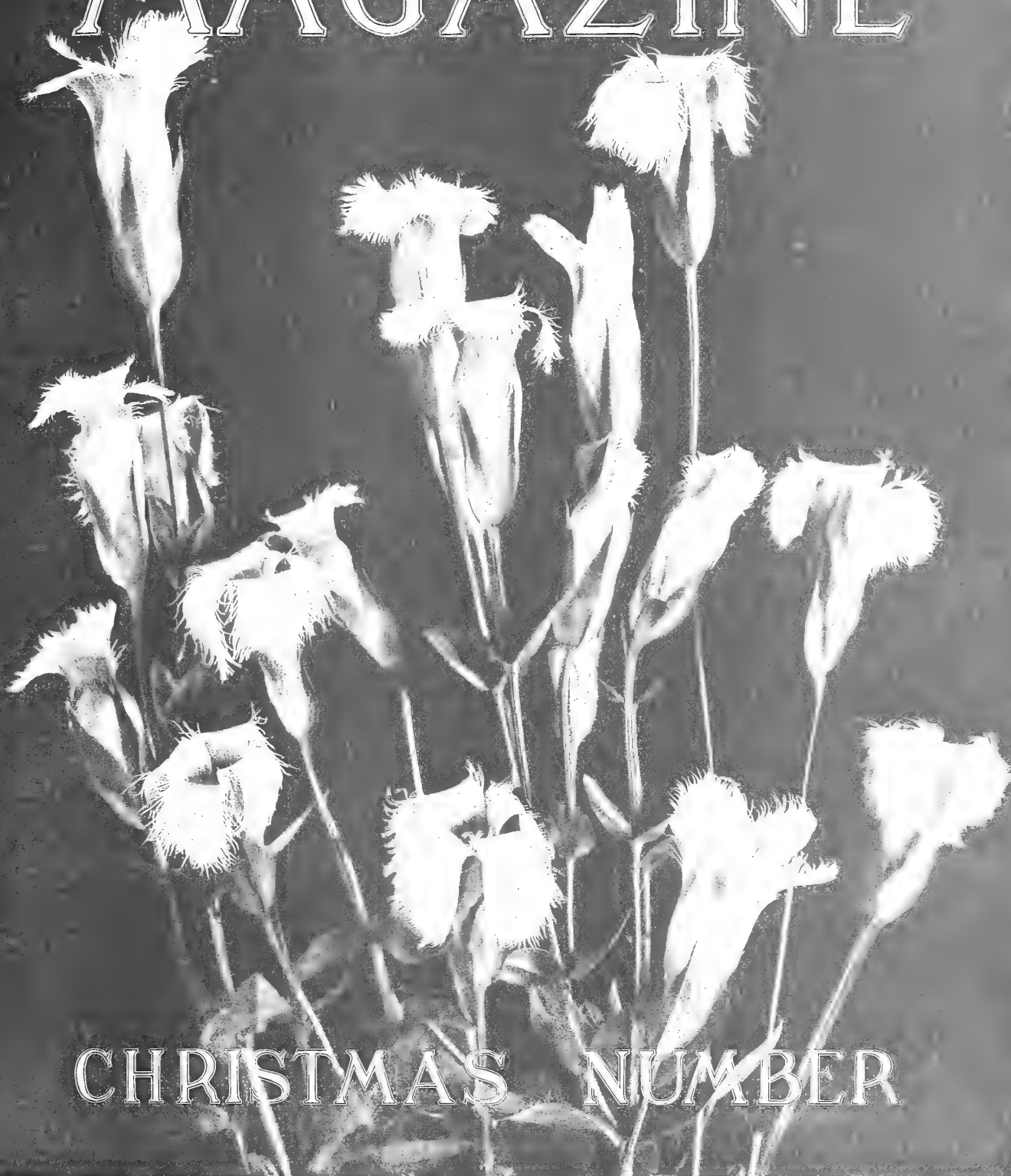
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adding the Fringed Gentian to
our Garden Flowers

Indoor and Outdoor
Plants for Christmas
Beauty and Cheer

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\$1.00 a Year

THE GARDEN MAGAZINE



CHRISTMAS NUMBER

COUNTRY LIFE
• IN AMERICA •



DOUBLEDAY PAGE & CO
133-135 & 137 EAST 16TH ST. NEW YORK



THE WORLD'S
• WORK •

TOMATOES IN FEBRUARY

PERHAPS you recall that our October ad. pictured the Irvington-on-Hudson man's Greenhouse—a nice little compact affair that fills him with healthy enthusiasm—and abundant vegetables besides? You remember that after the roses were gone he started Tomatoes, Melons, Cucumbers and the like. This cut shows just how the Tomatoes looked last February—70 days after starting from the seed.



The Garden Magazine.

His method is to cut off all "laterals" and train the main stem along wires a foot from the glass. At every joint will form an almost grape-like cluster of smooth, meaty, delicately flavored fruit. While the cluster on the first joint will be ripe the next is a bit green, the one above all green, and so on up to the last, which is just in bloom. Thus he has a continuous yield from the same plants. On the other side bench—out of sight on the left—are the cucumbers and melons. Through the partition beyond you can almost see the azaleas and Easter-lily plants in the middle, with violets on the side beds.

The returns in flower joys and table delicacies from one of these snug little houses is surprising! The owner of this house at Rye, N. Y., had abundant flowers all the seasons through, raised enough vegetables to pay for all the coal of the heating plant, besides buying \$75 worth of bedding stock.

We want you to know about our lean-to greenhouse at \$500; the single-apartment, even-span house; the more extensive ones with a palm house—in all, a most interesting collection of illustrations. Send for collection U-G.

BURNHAM-HITCHINGS-PIERSON COMPANY, 1131 Broadway, New York

Boston Branch: 819 Tremont Building

BODDINGTON'S BULBS BLOOM!

The Fall bulb season is fast drawing to a close, and I now make this interesting offer of bulbs to bring brightness and cheer to the



WINDOW FLOWER GARDEN

- 3 Dutch Hyacinths
- 6 Single Tulips
- 6 Double Tulips
- 12 Freesias (white)
- 6 Double Daffodils
- 6 Paper White Narcissus
- 2 Chinese Sacred Narcissus
- 1 Easter Lily (*Lilium longiflorum*)
- 10 Crocus—various colors
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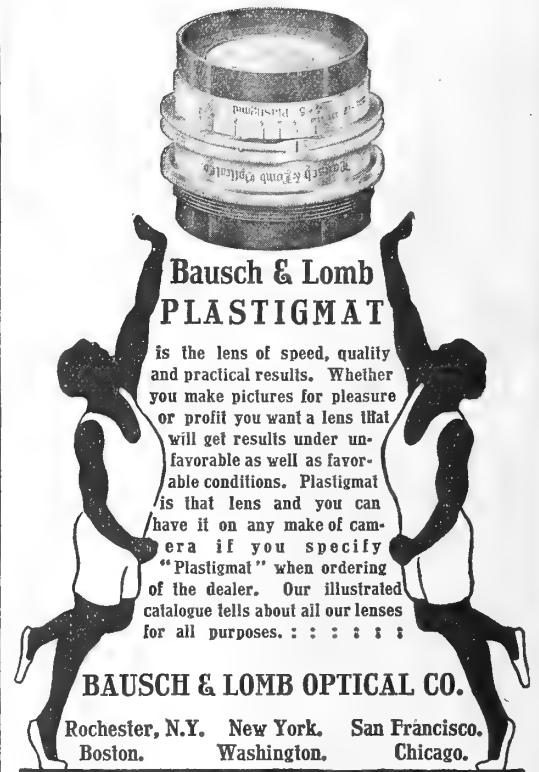
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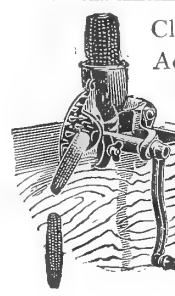
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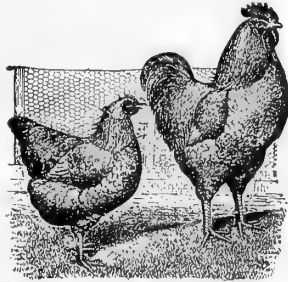
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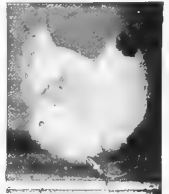
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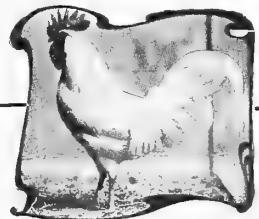
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The publishers of the two magazines believe that by working together they can serve the interests of country-loving Americans better than by working apart and advertisers will have the advantage of the combined subscription lists of the only two important magazines in this rapidly widening field.

COUNTRY LIFE IN AMERICA finds itself firmly established and only eight months were necessary to give "The Country Calendar" such a subscription list as usually comes only after years of effort.

The owners of "The Country Calendar," The Review of Reviews Company, retain an interest in the publication and will join in the work of extending still further the circulation and influence of the most beautiful, useful and completely representative journal of country life.

Here are some definite suggestions of features during the coming year :

The Inside of the Country House

Since the magazine was first started, it has devoted special attention to every branch of home-making in the country—except furnishing and decorating the inside of the house. Every issue hereafter will contain at least one article on this important subject. Among the ideas to be treated are :

The Truth About Antique Furniture
Furnishing a House For \$1,500
The A-B-C of Arranging Pictures
A Plea for Comfort in Chairs and Sofas
Wainscoting in Natural Woods

Window Curtains and Portières
Ceilings and How to Finish Them
Successful Rooms All Over the House
How to Buy Oriental Rugs
Etc., Etc.

Discoveries and News of Outdoor Interest

Mr. Gilbert H. Grosvenor, editor of the *National Geographic Magazine*, will contribute each month an account of the new things which interest the country dweller. The government departments at Washington are constantly making new discoveries, and scientific circles there hear of investigations elsewhere long before they get into print. Within a year, for instance, the growing of mushrooms has been revolutionized by Prof. Duggar's researches in "Virgin Spawn," the wonderful effects of soil bacteria have been made known, and dozens of other similar additions to knowledge have come up. This department will chronicle everything of this sort and show what each item means to the ordinary person.

Outdoor Life

Mr. A. Radclyffe Dugmore made a trip for us to the Pacific Coast and to the Northwest last summer, and secured material for a number of wonderful articles on different sorts of fishing. It is not too much to say that Mr. Dugmore's photographs have revolutionized the illustrations of sport—they give one the actual thrill of the sportsman at the most exciting moment. Among these articles are:

After the Vanishing Grayling
Fishing for Yellowtail at Santa Catalina

The Unique Golden Trout
Fishing for Rainbow Trout

The February issue will contain some more leaping tarpon photographs by Julian Dimock, even more startling than those of a year ago, and Mr. Dimock tells how he got these results. He will also contribute an article on the almost unknown pleasure of salt-water fly fishing.

Mr. Herbert K. Job has been out among the great sloughs of North Dakota, where the wild ducks breed. We shall publish an article by him showing wild mallards, canvasbacks, ruddy ducks and many other species flushing from their nests; great ricks of males getting up from the edge of the marsh; nests and eggs; and amusing ducklings.

The Planter's Guide

The article in the December issue on "Planting for Winter Comfort and Beauty" is the first of a practical series which will tell readers just what tree, shrub or flower is best for every special place and purpose. The dominant idea is the *needs of the planter*—not the dry botanical classification, but the living, urgent, horticultural problems.

THIS IS THE KIND OF THING EVERYONE REALLY WANTS TO KNOW:

How to Have Flowers After Frost
What to Plant at the Seaside
What Will Grow in Dense Shade
Trees with Brilliant Leaves and Berries

The Largest-flowered Trees
The Best Hedge-Plant for Each of Twenty Purposes
Shrubs That Are Attractive Both in Fruit and Flower
The Best Salad Plants

We announce provisionally these subjects and dates:—**Quality Fruits and Vegetables for the Home Garden**, for March, 1906. **The Best Ground Covers**, for June, 1906. **Bulbs for Every Place and Purpose**, for September, 1906. **Berried Shrubs**, for November, 1906. **A Study of Autumn Reds**, for December, 1906 (with eight pages in color), a classification based on the new color chart which really works, and full directions for preserving until Christmas by a new, simple process huge branches of gorgeous autumn leaves. These articles mark a new era in gardening literature.

Other Strong Features will be:

The Country Home Reminder

Telling each month the necessary activities of the owner of a country place.

Special Double Numbers

We shall publish as usual the superb special double numbers: March on Gardening, October on Housebuilding and the Christmas Annual. These have been notable factors in the magazine's success and have helped to make it unique and unapproachable.

Wild Foods

A most interesting series of articles, by the foremost authority on the nuts, berries, roots, leaves and fruits of every kind which nature provides month by month for all who have knowledge of her secrets.

Cheap Land for Successful Farming

A continuation of the extremely successful series of first-hand investigations, showing just where land can still be bought for \$10.00 an acre and how to make a living on it.

Masterpieces of Nature Poetry

The great nature poems of the English language, selected by Henry van Dyke and charmingly illustrated by Henry Troth.

Walter J. Travis on Golf

Timely articles each month on Horses, Dogs, Cattle, Poultry, Automobiles, and so on

The Readers' Service

And, finally, when any of our readers wishes exact information upon any subject within the magazine's scope, a letter to the Readers' Service will put the writer in communication with those who can best serve him.

Good Until February First. After that Date Price will be Raised

Until February 1st we will accept \$3.00 for a year's subscription and \$6.00 for two years. Price after this date, 35 cents a number (50 cents as before for double numbers) and \$4.00 a year. Send us the coupons below with details filled in.

CUT OFF HERE

Messrs. DOUBLEDAY, PAGE & CO. [1-G M-12-5]
 133-137 East 16th Street
 NEW YORK CITY Date

Enclosed find \$3.00, for which send me COUNTRY LIFE IN AMERICA for a year, beginning with the number.

Name

Address

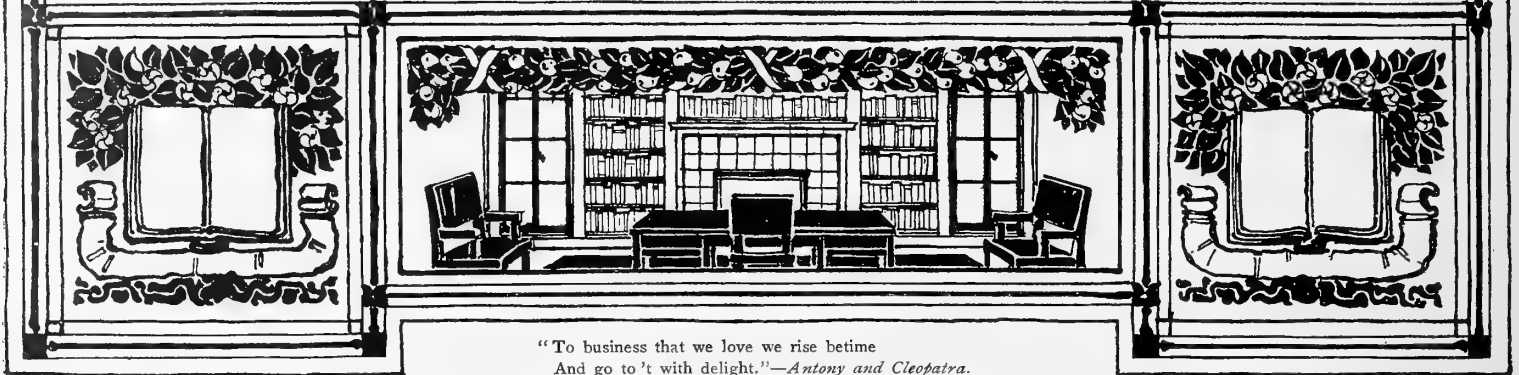
Messrs. DOUBLEDAY, PAGE & CO. [2-G M-12-5]
 133-137 East 16th Street
 NEW YORK CITY Date

Enclosed find \$6.00, for which send me COUNTRY LIFE IN AMERICA for two years, beginning with the number.

Name

Address

THE TALK OF THE OFFICE



"To business that we love we rise betime
And go to 't with delight."—*Antony and Cleopatra*.

SUBSCRIPTION SEASON

WHEN THE GARDEN MAGAZINE was started last February, the best part of the so-called subscription season had gone by. This year we have planned to take full advantage of readers' inclination to decide upon a year's reading at the end of the year. If any of our readers will get one new subscriber and send a new subscription with his own, with \$2 for both subscriptions, we will send any of the following cloth-bound books with our compliments:

- "How to Plan the Home Grounds," by Parsons.
- "How to Attract the Birds," by the author of "Bird Neighbors."
- "The Heart's Highway," by Mary Wilkins Freeman.

THE NEW LIBRARY SALESROOM

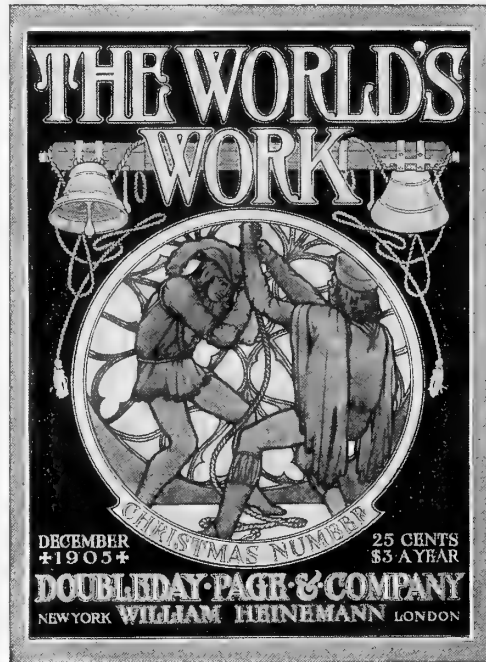
At this Christmas time we call attention to our library salesroom at 133 East Sixteenth Street, between Third Avenue and Irving Place, and invite our friends to examine our books, magazines and pictures.

A NEW MAGAZINE

In another place (page 204) we publish the announcement of the consolidation of *The Country Calendar* with *Country Life in America*, which takes place in the January number; and, since thus the number of magazines becomes less by one, we hope that we may start a new magazine without undue blame. Our last venture, THE GARDEN MAGAZINE, has been a success because it filled a well-defined need. The new monthly has the same valid excuse for coming into existence. It will be called *Farming: An Illustrated Home Magazine devoted to the living and growing things on the farm*. It will be beautiful in its sumptuous and profuse illustrations, as well as practical, helpful, progressive, scientifically accurate and—popular. Especial attention will be paid to the home animals, horses, cattle, dogs and poultry.

There are already many excellent farm periodicals, but there is not one which attempts to fill the field which this new magazine will occupy. The farmer of to-day who is tilling the land or raising live stock for profit or pleasure has come to appreciate the best; he wants good printing, fine paper and the best pictures that can be produced. We expect to make a *magazine* for the farmer and for his wife as distinguished from an

agricultural journal. The price will be \$1.00 a year and the subscription books are now open.



THE WORLD'S WORK

The Christmas Number is a fine one—a suggestion for a Christmas present—\$3.00 a year.

RENEWAL TO MAGAZINES

Like everything else in publishing, the work of taking care of magazine subscriptions is greater than can be comfortably attended to in December. Will you do us the favor to send your orders as early as possible, by December 10th or 15th if practicable?

THE CHRISTMAS ANNUAL OF "COUNTRY LIFE IN AMERICA"

In England through a long series of years there have been built up great Christmas Annuals which have come to mean much to the people of the whole country. As an out-of-door Christmas is the best kind, we felt that *Country Life in America* was the best-fitted magazine to celebrate in a sumptuous way this great holiday of the whole world, and the Annual for 1905 represents the best we have been able to do in this exhilarating

field. It is the spirit of the number that makes it what it is, and no printed description can convey that. Our readers will find it on all the news-stands on November 25th, and to those who send us a yearly subscription at the present price of \$3 it will be sent (and two other 50-cent numbers) in their series of a year's numbers without extra cost. The subscription price of *Country Life in America* is increased to \$4 a year, after February 1, 1906.

THE MAIL ORDER DEPARTMENT

In this connection we wish to speak of our Mail Order Department. On the fourth floor of our new building there are about one hundred people busy attending to the wants of our patrons who purchase books by mail. If you are interested to know more of this place, send your name and address to the Mail Order Department, and full and interesting information will be sent you.

Just now this branch is sending out thousands of a little set of books of the utmost practical value, called "The Home Library of Law." It gives so much that is helpful in the way of information which all intelligent people ought to know—but do not—that its great success is not a surprise to us; and, best of all, the price and manner of paying are tempting. The six volumes have been in hand for four years, and Dr. A. S. Bolles, its editor and author, has made it a work of enduring value.

"The Nature Library" is another set that we are pleased and proud to sell so many of, and still another is the collection of wonderful photo-mezzotint reproductions of the great masters. We have attractive booklets describing these works, and it will be a pleasure to send them upon request.

THE PRINTERS' STRIKE

At this writing there seems little doubt that the printers' strike will be declared on January 1st, as outlined in our last number. We are convinced that it would be cowardly to accede to the Union's new demands. Should there be any delay in receiving the February number of your magazine, we ask that you be patient. We have high hopes that the arrangements that we have made will make any excuse unnecessary.

THE DOG BOOK

BY JAMES WATSON

MR. WATSON has been a dog breeder and student for thirty or forty years, both here and in England. This long experience, both as a judge at shows and as a practical fancier, has been supplemented by exhaustive research; in consequence, his book is really the first adequate treatment of the dog in America. It is full of practical information as to buying and breeding dogs, their care and the like. Then each separate breed is taken up and described at length; how it originated, what its special qualities are, the points of a perfect specimen, and its value. The tremendous increase of interest in dogs and canine matters during recent years is well shown by the number and prosperity of the Kennel Associations, and this work will, beyond question, be the standard on the subject. It is the only volume here or in England in which the possibilities of photographic illustrations for dog portraits and animals in motion have been made use of.

Elaborately illustrated from photographs; to be in ten parts, each of about 80 pages; price per part, bound in heavy paper, \$1.10, subscription.

APPROXIMATE CONTENTS

ALREADY PUBLISHED

IN PREPARATION

Part I. Historical and General: Care of dogs, how to exhibit them, etc.

Part VI. Terriers, Bulldogs.
Part VII. Terriers (continued).

Part II. Setters: Early Setters and English.

Part III. Setters: Irish, Gordon and Spaniel.

Part IV. Spaniels, Pointers.

Part V. Collies, English Sheep-dogs.



CHARITY

Part VIII. Mastiffs, St. Bernards, Newfoundlands, Great Danes.

Part IX. Hounds.

Part X. House-dogs, toys, etc.

Now that Five of the Ten Parts are Ready for Delivery, there are

TWO GOOD WAYS TO GET THIS WORK

PLAN NO. 1.

The separate parts will be sent postpaid for \$1.10 each. Subscribers taking the parts as they are issued have the advantage of early possession, and the entire ten parts will cost only \$11.

PLAN NO. 2.

Or the entire work, when completed, will be sold for \$12, bound in buckram; or \$16, bound in half-leather—this will be cheaper in the end than buying the parts and having them bound yourself.

AND A BETTER WAY

PLAN No. 3.

But, in order to induce advance subscriptions, we present the following "reciprocity" plan: We will enter your name as an *Advance Subscriber*, sending you immediately all the parts now ready, and the remaining parts as fast as they come from the press. When the publication is completed these parts are to be sent back to us at our expense, and we will bind them in buckram or half-leather, as you may choose, and return them to you express prepaid. Advance subscribers will be asked to pay \$5 upon receipt of the parts now ready, but will make no further payments until the set has been completed and bound, when a final payment will be asked: \$5 if cloth binding is chosen, or \$8 if half-leather.

SEND US THIS BLANK

Your name will be entered on our Advance Subscribers' List if you will return this blank at once, properly filled in:

Your first name..... Middle initial.....

Your last name.....

Shipping address.....

Mail address.....

City and State.....

Reference.....

Which plan do you prefer—No. 1, No. 2 or No. 3? (see above).....

WE GUARANTEE to complete the work and to deliver the parts as issued (the last to be issued about March 1, 1906), and to attend to the binding of the parts promptly in accordance with your choice.

[G 1-270 O]

THE GARDEN MAGAZINE  COUNTRY LIFE IN AMERICA  THE WORLD'S WORK

DOUBLEDAY PAGE & CO NEW YORK

The Garden Magazine

DECEMBER, 1905

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WILHELM MILLER, Editor

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COMBINATION BENCH and TOOL CABINET

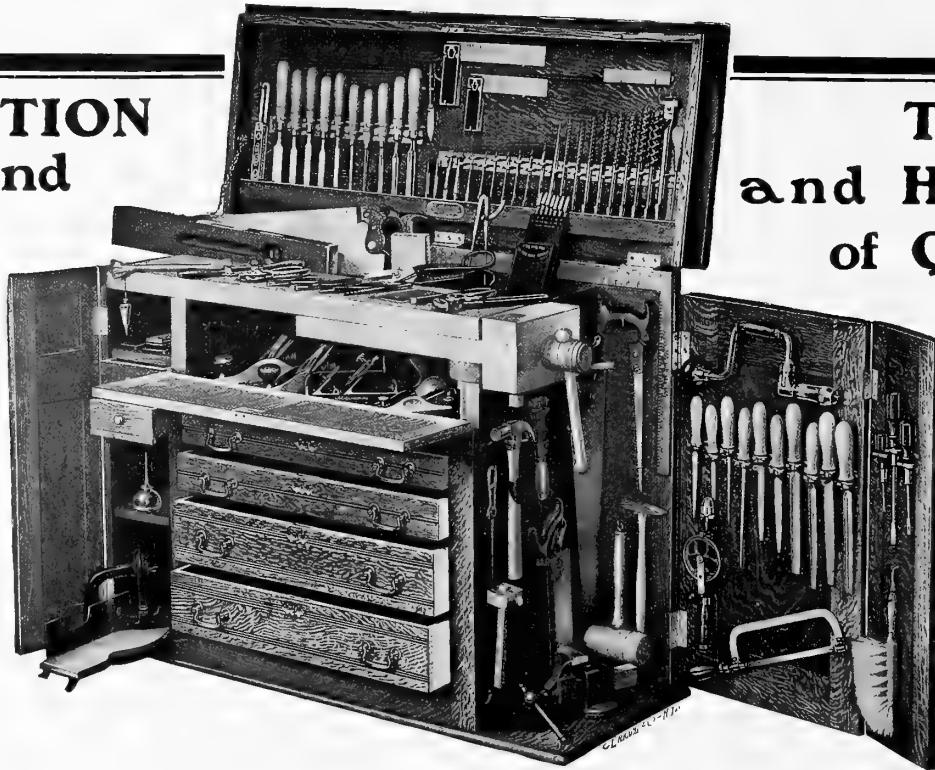
Consisting of a solid oak, brass-trimmed, highly finished cabinet, with work-bench and vise; a complete assortment, 95 in all, of the finest quality standard carpenters' tools.

**Complete, as
illustrated, \$85.00**

We make also the following Outfits in polished oak, brass-trimmed Wall Cabinets, about the size of a large suit-case, with same grade of tools as above.

No. 51, 14 Tools, \$ 5.00
No. 52, 24 Tools, \$10.00
No. 53, 36 Tools, \$15.00
No. 54, 40 Tools, \$20.00

Our prices are f. o. b., New York, giving the best tools made (instead of cheap tools and paying the freight). *Special Tool Outfit Catalogue, No. 1878, illustrates and describes all five outfits. Send for copy.*



Tools and Hardware of Quality

Our lines include Builders', Cabinet and Piano Hardware, Bolts, Screws, Nuts and Factory Supplies, and all kinds of Small Tools for Wood and Metal Workers (also Benches and Tools for Manual Training). We deal with consumers direct and invite correspondence.

The "Tourist" Autokit is made up of the very best selected tools obtainable and is the highest type of repairing outfit for road use. The "Tourist" is especially arranged with reference to its quality and utility, and embodies every possible permanent and emergency value that can be included in a kit of this size.

We issue many Special Catalogues, among which are the following:

No. 1879, Wood Carvers' Tools.

No. 1880, Venetian Iron and Tools.

No. 1881, Tourist Autokit.

HAMMACHER SCHLEMMER & CO., 4th Ave. and 13th St. Block South of Union Square, New York
HARDWARE, TOOLS, SUPPLIES AND PIANO MATERIALS NEW YORK SINCE 1848

WE OFFER 40 SELECT VARIETIES OF

EVERGREEN TREES

besides several varieties of evergreen and berried Shrubs for the

COMFORT AND BEAUTY OF WINTER HOMES

They have been oft transplanted and grown upon land suitable to develop a mass of fibrous roots for safety in transplanting. Larger sizes balled and burlapped.

Of 10,200 Evergreen Trees sold to a large estate in the Spring of 1904, the superintendent recently told me he had not lost more than one in a thousand.

To properly select and locate trees for best results, one must not only know their habit and ultimate size, but also have an eye for the beautiful in Nature. Knowledge, experience and taste combined will produce a picture. Let us assist you.

Do not wait until we are working 14 hours a day. Write us at once. Original plans for Rose Gardens, Hardy Gardens and development of estates.

S. G. Harris, M. S., Tarrytown, N. Y.

DREER'S GARDEN BOOK FOR 1906

☞ Will be mailed without request during January to all present customers. Other readers of "The Garden Magazine" can obtain a copy by writing for it, kindly making mention of this magazine.

☞ It is a large and beautiful book, describing the most complete lists of SEEDS, PLANTS, BULBS, etc., ever offered, and is profusely illustrated both in colors and photo-engravings.

☞ All who are interested in nature's products should write at once and have their names entered for a copy, which will be sent when ready.

HENRY A. DREER
714 CHESTNUT ST., PHILADELPHIA, PA.

The Garden Magazine

VOL. II.—No. 5
PUBLISHED MONTHLY

DECEMBER, 1905

(ONE DOLLAR A YEAR
TEN CENTS A COPY)

[NOTE.—For full Table of Contents of this month's number see page 207.]

How to Make Your Plants Survive This Winter

AFTER the ground has frozen and the field mice have found their winter quarters, mulch your strawberry bed, hardy border of perennials, newly planted trees, bulb beds, broad-leaved evergreens, and anything that you are afraid may be tender, especially shallow-rooting plants, which are not killed by zero weather but by alternate freezing and thawing.

OUTDOOR WORK FOR PLEASANT DAYS

Saw dead limbs from trees. (For the right and wrong way see March GARDEN MAGAZINE, page 66.)

Examine every dying bush for the greatest insect pest of modern times—the San José scale. (If you want to be absolutely sure, see February GARDEN MAGAZINE, page 22.)

Gather bagworms from arborvitæ and other evergreens, and destroy them.

Bring in other cocoons for nature study.

Store carrots and parsnips in the cellar and cover with sand, to prevent wilting.

Cover kale in exposed situations lightly with coarse litter.

Store onions for winter use in a dry, airy place—not the cellar. Select only well ripened absolutely dry bulbs, with no suspicion of disease. You can spread them out thinly, on the barn floor, away from the walls,

let them freeze solid, and then cover several feet deep with hay or straw.

Before the mercury falls to 22° F. give celery its final covering, in trenches or pits.

EARLY VEGETABLES WITHOUT GLASS

You can have land ready to plant next spring a fortnight or more before your neighbors, if you will prepare a bed now by throwing up high narrow ridges with deep furrows between.

HOW TO HAVE THE IMPOSSIBLE

You can't have the best lilies if you wait until spring and buy ordinary store bulbs, for they will be rootless and shrivelled, and may not bloom for a year, if at all.

Contrariwise, the Japanese bulbs do not reach this country until November. Sometimes you cannot get the bulbs until the ground is frozen, but—

You can keep the frost out of the ground by simply heaping fresh manure upon your proposed lily bed to the depth of a foot.

Do this before the ground freezes and you can plant lilies in December!

LATITUDE OF RICHMOND, VA.

Early potatoes can be planted in open weather up to Christmas.

Sow in coldframes radishes, lettuce and beets—the easiest way to grow vegetables for home use in winter.

LATITUDE OF NEW ORLEANS

Sow all hardy vegetables.

Start the tender ones in spent hotbeds—tomatoes, peppers, eggplants.

Risk a few Irish potatoes, after the middle of the month, whenever there is a good chance to plant.

Plant pecans and other nuts, to be budded later with the best varieties.

Camellias in bloom outdoors. Don't let any one ruin your camellia trees by tearing off small branches. Cut them properly.

In the Greenhouse

IF you want the most distinguished flowers ever shown at a lawn party or used for temporary porch decoration, buy gloxinia in November. They need to be potted bulbs as quickly as you can get them. Among large, tender, bell-shaped flowers they have no equals in purity of reds and blues and beauty of throat spotting.

You can buy cyclamen bulbs in November and December for twenty cents which will give you flowers next Christmas that would cost you two or three dollars at the florist's.

If you want the most beautiful white plummy flowers anyone can have at Easter,

and before, order *Astilbe Japonica* now. (Trade name, *Spiraea Japonica*.)

If you want a floral surprise for your friends next autumn, buy now a collection of those extraordinary spidery flowers, the nerines.

If you want the pick of the world's best gladioli, order your bulbs in December instead of waiting till March. They are the easiest bulbs to store; temperature makes little difference if you keep them dry. To keep them away from mice, put them in tin boxes or, with home-grown bulbs, hang them, plant and all if you like, from the rafters in the attic.

The Fallen Leaves

DON'T make the mistake of digging autumn leaves into your garden this fall. If you put in too many they will not decay until spring, when the fermentation will destroy the roots of plants.

Make a compost heap of them. Warn your man to keep the stones out of them and next fall, when you come to make flower beds and pot bulbs, you will bless the GARDEN MAGAZINE. Leaf mold isn't very rich in plant food but it is the best thing in the world for improving the texture of the soil, and without good texture all the fertilizers in the world are no good.

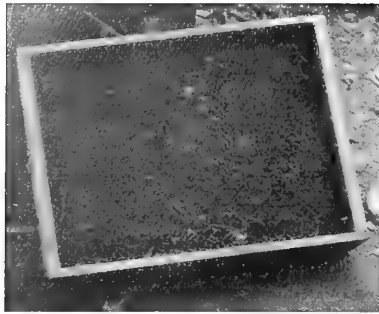
We offer ten dollars for the best short illustrated account of results achieved by making a compost heap of autumn leaves. It must be by a beginner who makes his first compost heap after reading this (see also page 232).



The most showy Christmas flowering plant is the azalea. Its beauty soon passes, but it can be kept outdoors during next summer, and will flower again



The most holiday-like plant in its color effect is the poinsettia (*Euphorbia pulcherrima*). It requires considerable heat to get good bright-red bracts



A seed bed of sphagnum moss is free from the damping off fungus



This is all the growth the fringed gentian makes in the first six months



The gentian seedlings (lower) growing wild are much like heal-all (upper figure)



All these gentians were successfully grown and flowered in pots

The Elusive Fringed Gentian a Garden Plant at Last!

OUR LOVELIEST BLUE WILD FLOWER MAY NOW BE GROWN BY ANYBODY—THE MYSTERY OF ITS "CHANGE OF HAUNTS" EXPLAINED—WHY WE NEVER FIND THE PLANT BEFORE IT FLOWERS

On the principle that the most effective way to prevent the extermination of our choicest wild flowers is to get people to cultivate them, the publishers of THE GARDEN MAGAZINE and "Country Life in America" have been trying for four years to find out how to grow the fringed gentian. We have published defiant statements to the effect that no one has ever grown it, in the hope that someone could disprove it, but unfortunately no one has accepted the challenge. We have dozens of letters from professionals and skilled amateurs who have tried it and failed.

Fringed gentian seed (*Gentiana crinita*) has been offered in one of the ultra-respectable seed catalogues for many years. We have bought it but could never make it grow, nor have we ever had any better luck with seeds collected to our order.

Imagine our delight, therefore, when a reliable nurseryman offered last year—not the seeds, but the actual young plants.

Alas! these, too, failed to grow, not only for us but for all the other customers of our nurseryman friend, greatly to his mortification.

Meanwhile, in private correspondence and conversation, we had been urging some of the best gardeners we know to take up the problem and "stay by it" for years. At last Mr. Thomas Murray, gardener to Mr. Pierre Lorillard, at Tuxedo, N. Y., offered to undertake the work.

Two years slipped by. No word passed between us and, to tell the honest truth, we forgot that Mr. Murray had promised. Picture our astonishment, therefore, when he walked into our office last September with two potted plants of gentians, each bearing eight or ten perfect flowers!

Mr. Murray saved the seeds until spring and sowed them in a coldframe on a bed of chopped sphagnum moss, thereby securing a combination of constant moisture and perfect drainage. The rest was easy.

The fringed gentian is not an annual. The books are wrong. It is a biennial—or perhaps more exactly a "rosette" or "winter annual," i. e., the seeds that ripened in the fall of 1905 will only make a little rosette of leaves in 1906 and the plants will not bloom until 1907.

NOW WE UNDERSTAND

1. Why the fringed gentian seems to "change its haunts" every year. The pods are often frost-bitten before they get a chance to ripen seed.
2. Why flowering plants moved to your home in the fall of 1904 did not bloom this year. They are dead. Their seedlings may bloom for you next year.
3. Why many people have failed. They have innocently slaughtered

The Culture of Fringed Gentian

By Thomas Murray

MY FIRST attempt at growing the fringed gentian was in 1901. The seeds were gathered in 1900, cleaned, kept in an envelope during the winter, and sowed along with my other garden seeds in April.

A garden-soil compost in a flat three inches deep was used as a seed bed. This was placed in a coldframe and the watering and ventilation carefully done, but never one gentian appeared.

The spot where the seed was gathered had been marked, and in June a careful search for a few self-sown plants was unsuccessful. But when September came I picked the blossoms. The fact was, I did not recognize the seedlings in the early stage of growth.

I did not gather any seed in the years 1901 and 1902, but contented myself with looking for the plants in their native haunts. Each season I found them in the same places, but in varying quantity. The reason for this was that the early frosts killed the flowers before the seed was matured. It was not because

hundreds of gentian seedlings, thinking they were weeds. Don't rake your gentian bed in spring.

To be sure, we have since heard of other persons who have grown fringed gentian from seed, and it is only natural that, in a case like this where many people have been experimenting, more than one should approach success.

Among published records of the fact that this gentian has been raised from seed is that of Mr. J. Ford Sempers, of Aiken, Md., whose statement appears in the "American Botanist," for January and November, 1904, but the cultural requirements are not given in detail. Plants of Mr. Sempers' raising were received at the New York Botanical Garden, on March 16 and 29 of this year, and one of these endured to flowering stage, where we saw it in October. One other plant was living, but the others had died. These were all still in pots, and had not made any luxuriant growth. The specimen that flowered was six inches high, with two blooms.

At the Buffalo Botanical Garden Prof. J. F. Cowell has grown fringed gentians at various times during the last half-dozen years, and he informs us that he used exactly the same material for the seed bed—sphagnum moss—as Mr. Murray did. He started them under glass and set out a few specimens in the ordinary border.

To both these gentlemen is due the credit of having attained results independently of Mr. Murray, but to the latter remains the unquestionable credit of having succeeded in definitely demonstrating that the fringed gentian can be grown in quantities as a garden plant.

The recording of a discovery in such a way as to make it generally available is at least half the battle, and it deserves some unusual recognition.

We have therefore established "THE GARDEN MAGAZINE Achievement Medal," which has been designed and executed by Tiffany & Co., and hereby ask Mr. Murray to accept the first gold medal.

This medal is not to be competed for. It will not be awarded except as a permanent reminder of the world's gratitude for a genuine contribution to horticultural progress.

the gentian had any tendency to change its haunts.

In November, 1903, I gathered a considerable quantity of seed, stored it as before in an envelope until April 1st, when it was sowed in a compost of well-decomposed leaf mold and fresh loam, as free from fungus as I could get it from the field. The leaf mold made the compost light, and I had, I thought, a fine seed bed. I used a three-inch flat, well drained of course, sowed the seed in rows one inch apart, and covered as lightly as possible. A good watering was then given, using a





The home of the fringed gentian. It grows in a moist, well-drained place, and demands rich soil to flower well

very fine rose on the watering pot, the flat covered with a sheet of newspaper to keep the soil from drying out, and as a further precaution the flat was put into a shaded frame, where the sun never shone on it.

SUCCESS AT LAST

The seeds came up in three and one-half weeks. I saw thin green lines across the flat, but unfortunately the soil was now getting dry, and I thought it necessary to water. The day after watering the green lines were not so plain, and two days later all that was left was a little tuft in a corner of the flat. Ten days later I pricked off sixty-five seedlings, all that was left from thousands; fifty-eight of these flowered.

This season I determined to try another seed bed, and selected sphagnum moss as more likely to be free from soil than moss found on rocks. Seeds were very scarce last season, so I had only a few to work with this spring, but every one that germinated has grown and at this writing is in a pot.

After the first handling I have had no trouble with the plants through "damping off." It is no more difficult than handling poppy seedlings, and indeed their root systems are very much alike. Each has a tap root which must be preserved. Of the two plants I would prefer to handle the gentian, as when once it gets a good start it is pretty sure to grow, whereas poppies are liable to succumb at any time.

There should be no difficulty in growing the fringed gentian in a greenhouse, where the atmospheric conditions are under control, and by baking the soil, to kill all fungus (as is done when germinating ferns from spores), the damping off of seedlings would be reduced to a minimum.

HOW TO GROW GENTIANS

Sow the seed the first week in April, using a shallow flat filled with sphagnum moss broken fine and pressed firmly with a board, to make a smooth, even surface. Soak the moss thoroughly and sow the seed thinly. Do not cover the seed.

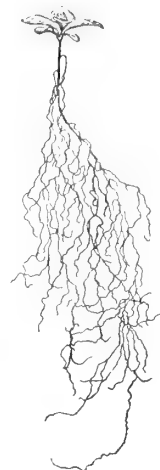
Shade with a newspaper, to prevent the moss from drying out too quickly. Should the moss become dry before the seeds germinate, dip the seed flat into a tub of water and let the water rise slowly through the drainage in the bottom until it reaches the

surface. Never pour water over the flat nor flood the surface, as the seeds are very small and are apt to be displaced and washed into heaps.

In about six weeks from the time of sowing, when the plants are about the size of a pin's head, transplant into $2\frac{1}{2}$ -inch pots or $2\frac{1}{2}$ inches apart in flats. Although the plants are small they are quite easily handled, the root being about $1\frac{1}{2}$ inches long. It consists of a straight or tap root, with sometimes a single rootlet, at this stage of growth.

In two months, or about the middle of July, transplant into $3\frac{1}{2}$ - or 4-inch pots, without disturbing the ball of soil around the roots—which needs special care, for, although the roots are long, they are not fibrous and do not hold the soil.

The first season's growth is finished by the latter part of September, when the plants will have four pairs of leaves, which lie practically upon the surface of the soil, there being no stem formed the first season.



Six months old from seed. The first season's growth mature. Notice the extraordinary root development



Toward the end of November the leaves fall, leaving only the thickened root stock, or tap root, with a tiny bud on top.

THE SECOND YEAR'S GROWTH

When spring comes again the main stem grows very quickly from this bud. There is only one main stem, just as there is one main root; all the branches that may form on the matured plant arise from this one stem, above ground, from the axils of the leaves. The plant does not make a "crown." When severe weather sets in the plants should have a covering of



The fringed gentian (*Gentiana crinita*) has the most intense violet flowers in September—all the books call them blue, but it is not sky blue. Abundant flowers are only found on plants growing in moist, rich soil such as that shown here. Hitherto no one has succeeded in growing the plant. It takes two years to flower from seed. Often early frosts kill the young seeds, and where the plant was abundant it appears in succeeding years in greatly reduced numbers, while the alternate crop is flowering in profusion elsewhere



Planted out in full sunshine, only a few specimens lived to the flowering age, and even then were small stunted plants. Of all those set out two-thirds died



But when planted in a half-shady, moist, and sheltered situation, bordering the walk on the left, every plant grew sturdily and flowered

leaves, to prevent alternate freezing and thawing, as this would tend to heave the soil.

The growth starts again in April, when plants are uncovered and watering attended to. In May the plants may be planted in a shady, moist border, or, if the pots are preferred, they should be placed in 5- or 6-inch pots.

Water is a very important factor in their growth; they do much better if kept always moist. It is better to have them a little too wet than too dry, especially when in pots. Plunging the pots into coal ashes, leaves, soil, etc., prevents them from drying out so quickly, and the plants are more easily handled.

The flowering season commences early in September, and if the plants are protected from frost they will continue to bloom till well into October.

The gentian growing wild is generally spoken of as being uncertain in its choice of

location, being found first in one place and then in another.

I have in mind a spot where it has been growing in more or less profusion for the past five years. It is a made boghole, not a regular soft-bottom quagmire but a little flat at the foot of a gravelly bank, and through it several springs find their outlet. A small bank was formed by throwing the soil from a ditch dug to carry off the spring water, and it retains enough water to keep the flat moist, even in the longest periods of hot summer weather.

Over the flat are small hummocks or mounds of gravel or sand on which moss has grown, and on these I find most of the seedlings. Now, although the mossy hummocks of gravelly soil seem to be ideal seed beds, the plants do not grow well. When matured the majority are little more than three or four inches high (very rarely twelve inches), bearing from one to six very small blossoms.

A strong plant with several side branches, making a big show of flower, I have invariably found growing in a deposit of rich loam—rather light than heavy. Never have I found a plant doing well in a clayey or hard-pan soil; the roots are soft, and must have a free, open soil.

This fall there are more wild gentian plants in bloom than in any previous year since I began taking notice of them. In 1903 the first killing frost did not come until the middle of October, thus allowing ample time for most of the seeds to ripen, and by June of the next year there were thousands of seedlings of the same crop as the plants I now have in flower. This season I had to look carefully to find a single seedling in the same place. Why? In the middle of September, last year, came a killing frost, which destroyed the majority of the flowers before the seeds had ripened. Consequently the wild gentian crop in 1906 will be small.

Record-Breaking Experiences in Gardening

LITTLE STORIES OF PERSONAL ACHIEVEMENT BY AMATEURS—AN ANNUAL DECEMBER FEATURE OF "THE GARDEN MAGAZINE" WHICH DISTINGUISHES IT FROM OTHER CHRISTMAS PERIODICALS—A "ROUND-UP" OF THE YEAR'S SUCCESSES

[There seems to be no adequate body of horticultural records in America—no generally recognized standards of excellence—save for a few special things. Yet, clearly enough, the way to make progress is to know the best that has been done, in order that we may do something better. We ought to know the earliest date for sweet peas to bloom in each locality; how big a Hubbard squash should be to stand any chance of winning a prize at an exhibition; the "points" of a good Seckel pear; how to tell quality peas simply by the looks of the seed, etc.

In order to find out what are the existing quality and exhibition standards, we invite the co-operation of our readers. We shall be glad to know of any considerable body of published records, and shall be glad to print all we can. While we pay for other acceptable articles, we particularly ask no one who desires remuneration to send statistical information of this kind. Such work ought, from the nature of things, to be a labor of love. Let us all join the gardening fraternity and do what we can for the cause of progress!

In order to beat existing records, we hereby offer an indefinite number of five-dollar prizes to anyone who produces facts and a photograph to prove that he has beaten any achievement recorded in this number. But, of course, a much better thing is to aim at something new and original.

And, thank Heaven, the finest things of life cannot be expressed by statistics. Take, for example, the following unpretentious little stories of home successes and pleasures. Are they not better than dry, lifeless figures?

This is what we want. Tell us what you had that was new, earlier, bigger, longer in season, and of better quality.

But remember this: THE GARDEN MAGAZINE exists for one thing—quality. It has no concern with things that will ship round the world, last forever, and taste like nothing—except to warn you against the biggest things which have no flavor. And we must reserve the right to be the sole judges of what is an important achievement for our readers.]

Large Mild Onions

WILLIAM SCOTT, Tarrytown, N. Y.

THE onions here shown are grown by what is known as the new onion culture. The method consists of sowing the seed in the greenhouse and growing on until the weather is sufficiently warm to plant outdoors. For the crop from which these were

selected seed was sown on the 15th of January. The plants were pricked over into flats (a moderately enriched soil being used) on March 3d, about 1½ inches of space being allowed to each plant and grown on in a house where a night temperature of 50° was maintained, being well exposed to light to prevent drawing. About the 1st of April they were set in a cold-frame (in the flats) and gradually hardened

off, and on April 20th transferred to the open ground. The rows were set 15 inches apart, and the plants 6 inches apart in the rows. The soil in which they were planted was a good, rich garden soil, liberally manured. They were kept well cultivated through the season but no water or liquid manure was applied. The combined weight of the three onions here shown is exactly five pounds, and



The backyard garden of a Boston doctor. It is but 6 x 6 feet in a bricked yard



Three Prizetaker onions that weighed exactly five pounds. Seed sown January 15th



The flowers of June 1st. This spot had bloom from March to October. (See opposite figure)

the average circumference measurement is 15 inches. The variety is Prizetaker, which we consider the best for producing large specimens. We have had them larger than this. The size can be considerably increased by feeding with liquid manure, but this renders the onions so soft that it spoils their keeping qualities. The flavor of onions grown this way is milder than when grown by the ordinary method.

A Garden in a 6 x 6 Backyard

JOHN DIXWELL, Massachusetts

I HAVE made a rockery in the smallest of city backyards at a cost of \$5.00. The yard has a bricked surface which cannot be dug up on account of the drain pipes, and the high brick walls shut out all but a little western sunlight. I laid the earth for the garden a foot thick on top of the bricks, and kept it in place by pieces of stone. The garden contains sword ferns and rubber plants from other people's rubbish, genistas and azaleas left over from Christmas, part-ridge berries, fir trees, mountain cranberry, jack-in-the-pulpit, meadow rue and ferns which I have picked up from woods and meadows. Two toads and a small green snake keep the plants clear of insect pests. I take in the house plants every winter, and the rest have come up themselves every spring for six years. As I never have time to take a vacation, I find this little garden very restful in the heat of summer.



A hedge for ten cents. Is there a better plant than the Castor bean for a quick-growing hedge?



Cauliflowers planted out on April 20th in a dry, exposed spot were sheltered by corn and grew the best heads in the garden

Continuous Bloom from March to October

FLORA LEWIS MARBLE, Pennsylvania

ONE can cover up the lonely spots of a garden with plants from the florists, but a much finer way is to plan a succession of blooms for each plot of ground long before planting time comes.

One part of our garden has two beds with a narrow path between. The lawn comes down to the front bed, the back bed extends to the fence. These beds are edged with hepaticas and snowdrops. By March 25th we can be sure of seeing them in bloom.

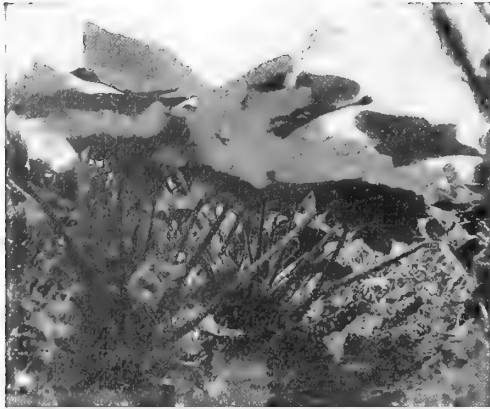
April and May are the months for wild flowers and bulbs, and the hardy Iceland poppies that are planted toward the centre of the beds bloom from early May until midsummer, and then again in the fall.

Between the borders and centres occupied by perennials is a piece of ground left for annuals. About the middle of April we put sweet alyssum seed in the first bed. This covers the retreat of the hepaticas. The first of May we set young pansy plants in the other strip to spread over the snowdrops. They bloomed from the middle of May to frost, for we kept them closely picked.

The month of June began with the iris. It is set among the poppies, in four clumps at the corners of the beds. The centre of each bed is given up to a large pink peony. Between the peonies and the iris clumps is a wild flower, the tall meadow rue. The meadow rue and peonies follow the iris.



The same spot as that shown in the picture opposite, but three months later. Gladiolus in full flower



Squash by June! By planting in rich compost on March 30th, they were in flower by May, when ordinary folk are just planting. Is this the record?

Nothing can be more beautiful than this combination.

Meadow rue grows rank after it is through blooming, and must be cut down by the middle of July.

California poppies come up from self-sown seed each year. Their slender stems can be seen about the meadow rue in June. When it is cut down they trail like magic over this new territory and cover it with golden glory through July and August.

Early in May we planted nasturtiums by the fence. They bloomed from July to frost. The foliage makes a good background.

Three rows of zinnias were sown at the same time. They formed a strong rank in front of the nasturtiums. They bloomed from the first of July to frost. We also found some room in the back bed for marigolds. They were kept closely picked and bloomed for the same period.

On April 22d and May 15th we tucked gladiolus bulbs in the soft earth among the iris rootstocks. The foliage is much the same. Through August and early September they seemed to re-create the iris.

The flowers grew and bloomed as follows:

- March 25 through April..Hepaticas; snowdrops.
- May.....Iceland poppies, yellow; pansies, purple (to frost).
- June.....Sweet alyssum, white (to frost); iris, in variety; meadow rue, white; peonies, pink.
- July.....California poppies, yellow; nasturtiums, orange (to frost); zinnias, mixed (to frost); marigolds, yellow (to frost).
- August-September....Gladiolus, mixed; late blooms of Iceland poppies.

All the parts of the beds given to annuals are dug up every fall and well-rotted manure raked into the open ground. It is spread over the perennials after frost, and raked away in the spring. Bone dust is added from time to time. This keeps the ground from wearing out, and gives us the assurance of an abundance of flowers each season.

Corn an Umbrella for Cauliflower

GERTRUDE WHITLOCK, Long Island

OUR early cauliflowers were set out in the highest, dryest and most exposed part of the garden instead of in a place the direct opposite of this, and to neutralize these con-

ditions we planted a crop of second early corn with them—two or three kernels between each head of cauliflower, which were set in rows 30 inches apart and 16 inches between each head. The cauliflowers had been raised in the hotbed and were set out in the open ground on the 20th of April, and the corn was planted on the 3rd of May.

As the cauliflowers were, perhaps, a foot high before the corn was planted, they had all the benefit of the sun in the cool spring-time, when they make their most rapid growth, and by the time the heads had begun to form and the days to grow hot the corn was big enough to afford a shelter without actual shade. Under these conditions the cauliflowers thrived as never before, most of the heads ripening perfectly without the necessity of tying them up in their outer leaves, as is necessary under ordinary conditions.

As each head ripened it was pulled out, root and all; as the roots grow straight down



Brussels sprouts left outdoors all winter but protected like roses with a straw jacket are wonderfully good eating in spring before the early vegetables

into the ground without spreading much, there is no danger of uprooting the corn at the same time. By the time the last of the cauliflowers are ripe, one has a flourishing crop of corn and a practical example of two crops on the same ground at the same time.



These sweet peas were blooming on May 5, 1905. They were planted in the open ground late in November, 1904, and were protected with mulch till March, 1905. Is there a better record than this of Mr. Harry R. Browne, of Cincinnati, Ohio?



Lima beans without poles. No. 10 fence wire stretched tight makes a strong support without the ugliness of bean poles. Planted in hills four feet apart and the rows also four feet apart

Heresy in Squash Culture

HOW TO EAT SQUASH WHEN OTHER PEOPLE ARE WATCHING IT BLOSSOM

GRACE L. WEEKS, Long Island

ALL the garden books tell us to wait until danger of frost is past before planting one's squash. This means some time in May in the vicinity of New York City. The crop is then due in July. We always have our first squash ready to eat before those planted in May are in blossom. We have a compost heap in the corner of the garden upon which all refuse is thrown—over-ripe vegetables, weeds, and bushes that are through bearing; this makes a famous top dressing and is spread over the garden in the spring with the other fertilizer and plowed under. Through this source we have been surprised to see how many seeds have the vitality to survive a winter out of doors, for here and there over the garden young plants have appeared. Last spring there were tomatoes, potatoes, onions, watermelons and squash—hints for fall planting.

Acting upon this suggestion, we planted a few squash seeds on March 30th, when planting first peas. They all came up despite the fact that a light fall of snow covered the ground on April 17th, were in bloom by regulation time, and full of fruit before the others had budded. If the little renegade squashes come up in the way of the regular crops they can be transplanted after a rain, in which case they will not bear fruit quite as soon as those that are undisturbed.

Brussels Sprouts Badly Out of Season

A CANNY DEVICE FOR GETTING "BABY CABBAGES" FROM FALL TO SPRING

G. L. WHITLOCK, Long Island

WHILE the fall of the year is the recognized season for Brussels sprouts, by a little management this delicious and healthful vegetable can be enjoyed for a much longer period of time—even as long a period as the following spring. We plant a supply greater than for our immediate needs, be-

ginning to use the delicate little cabbages after the first frost—they need a freeze before they reach their full flavor—and continue cutting from out of doors until December. Then we pull a lot of the stalks and hang them up, roots and all, in the cellar. These will last fresh for a month or so.

Others, brought in at the same time with those that are to be “hung,” we plant in a big box of moist sand or earth. These are ready for use when the other supply fails. By cutting off the tops and trimming off the roots one can plant much more compactly.

Select some of the finest stalks to winter out and either bundle them up in straw, as one would a rose-bush, or bend the stalk over to the ground and cover with leaves. They will not be injured by the hardest winter, and can be picked in the early spring when fresh vegetables are at a premium and not always in prime condition.

Record-Breaking Hedges of Annuals

L. M. BELL, Michigan

DOES anyone know a better way of raising a temporary hedge quickly from seed than by planting the castor bean? The one here illustrated was grown in Michigan, by Mr. Chester Binns, and it required one-half pound of seed for nine rods of hedge, the plants being set 18 inches apart. By sowing mixed varieties you will get a good mixture of foliage color when the plants grow up. It is better to sow the seed where the plants will grow, as transplanting often stunts the ultimate growth. I do not know of anything cheaper, as a hedge like the one illustrated can be had for about twenty cents.

The old-fashioned pole lima can be trained on wires to make a hedge, which is not only an excellent screen but will yield something for the table all through the season. If you stretch wires and do away with the old-fashioned and ugly bean pole, you will have something that is pretty as well as useful. Use No. 10 fence wire, stretched tight, and plant your seed in hills, 4 feet apart, four beans to a hill. Drive a small stick 12 inches long in each hill, tie twine to the stake and lead it over the wire, for the beans to climb up. If you have double rows, lead the string from one row to the other, to make an arbor. One hundred hills can be staked in this way for fifty cents.

Specimen Trees from the Woods

W. ANDERSON, Massachusetts

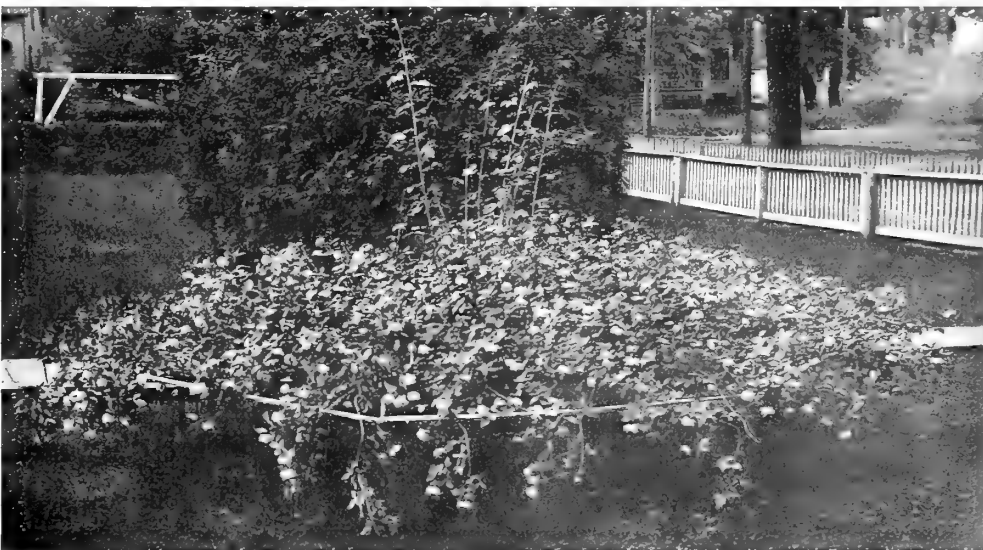
WE HAVE succeeded admirably in getting good-sized specimen trees by retaining the kinds wanted when clearing the land for the lawn. Hawthorns were abundant, and as ragged as any tree or shrub can be when jostled and crowded by the wild undergrowth. By clearing around them, adding a top dressing of good soil and treating them like other plants in a garden a year made a wonderful difference to them. The lower growth



Specimen thorns (*Crataegus*) on the estate of Mr. Bayard Thayer at South Lancaster, Mass. They are all natural woodland trees which were cleared around. Compare with trees in the figure below



These are the thorns in the Thayer woods just after clearing out birch, etc. Notice the bare lower portions, and see figure above for what a year's cultivation can accomplish



A single branch of *Prairie Queen* rose that makes a whole flower bed in Wisconsin. One year it bore 3,500 blooms. It is taken indoors each winter. Has anyone a better rose bush than this?

developed, and they measured 12 feet in height, with 8 feet in diameter at the base.

Bloomed Three Times in Fourteen Months

I. M. ANGELL, New York

SWEET WILLIAMS sown July 21, 1904, and wintered with no protection but the snow were in bloom the first week in June, 1905. By June 27th they had passed their best, and the flower heads were cut off before having a chance to go to seed. The plants sent out side shoots and were in bud again by the first part of July. The second season of flowering lasted about three weeks, until the first of August, when the plants were again cut back. On August 28th they started with a third crop of flowers. By this time the plants were very bushy, with numerous side branches, and the blooms were much lower than the first flowers. The photograph was taken at the height of their



Rhubarb all the year. Grow the plants in a barrel and feed heavily. Get extra strong roots in the first place and have pie the next season without waiting four years. This was photographed in July



Rhubarb—45 inches long, weight, eleven ounces

second bloom, July 22d. A humming-bird thrust his bill into the flower-head nearest the left margin of the picture, but his wings moved so rapidly that only the head is to be seen in the photograph. This record could not be made except by midsummer sowing. If we had waited till spring to plant our seed there would have been no bloom till next year.

3,500 Roses On One Bush

M. A. NICHOLS, Lodi, Wis.

THIS Prairie Queen rose-bush occupies a large section of the front lawn, for we have it trained horizontally over a low trellis—extended from time to time as the growth requires—instead of climbing, which is the usual way but more difficult to cover in winter.

As we have had it several years, it would be enormous in size if we did not keep it in check by cutting out the old branches and cutting off the ends of the new. This sharp pruning is done early in the spring, after lifting the bush out of its winter bed. We keep it about ten by twenty feet in size—the branches gracefully falling each way from one root.

Although this polyantha rose blooms but once a year, we have its roses about a month from first to last. One year it was so prolific as to bear 3,500 roses according to actual count—which is about a fair estimate of the usual succession—a most beautiful sight.

This rare growth does not come by chance; the ground must be rich and kept loosened about the roots. In dry weather the root branches need to be well watered and the foliage sprinkled. Then the foliage-eating worms and green bugs must be closely watched and guarded against. When we see the leaves have been eaten we know that the worms are around. A very weak solution of white hellebore—one tablespoonful to a gallon of water, switched on with a brush broom—will subdue them for a short period.

The green bug is noticeable underneath the leaves and along the very tender stems.



Don't rest satisfied with a dackyard like this, which is both unsanitary and an eyesore



But take a little healthy exercise—make a garden and enjoy fresh vegetables. This is two months' result

Kerosene emulsion, exceedingly weak—a gill of the preparation to a gallon of water—thoroughly sprinkled on the foliage from a watering-pot, is the best antidote for them for the time being. Both of these remedies have to be used quite often during the season; the only care needed is not to injure the foliage by having the solutions too strong.

This rose-bush grows thriftily all summer. Late in the fall it is gently taken down from its frame and supported near the roots by some very low boxes, so as not to bend the strong branches too abruptly. If any are too stiff to lie down well light weights are put



We have no records. But can anyone send us a picture of a better bed of Day-lily (Funkia) than this?



Sweet Williams (*Dianthus barbatus*) in flower at eleven months. This achievement is the result of sowing the seed on July 21st—the plants were in flower the following June. Three crops of bloom in fourteen months, by cutting out the old flower heads to induce branching. Notice the humming-bird's head to the left

on at first, gradually increasing the weight until pliable. Then, with a thick covering of straw and a few light boards to keep it in place, the bush rests securely through the rugged winters and is ready to smile again in June.

In the spring of 1904, in taking off its winter covering, we found the mice had girdled for some distance every branch but two. These were almost girdled. The crowning glory of our extensive grounds was an entire wreck. Every branch was cut off close to the root excepting the two mentioned—just a couple of whips in place of the long-time majestic bush.

The picture accompanying this shows the marvelous growth in a little over a year. It now occupies a trellis 9 x 15 feet, and promises to be more prolific than ever. Another catastrophe of this kind is not anticipated, as we have learned that sulphur freely sprinkled around the roots before covering will effectually prevent such ravages.

Rhubarb for Table All Summer

H. R. ALBEE, New Hampshire

HALF a dozen well-established rhubarb plants furnished our family of six people with rhubarb all summer, if not pulled oftener than twice a week.

Secure large undivided roots that will give results without waiting four years. The Linnæus is a choice early variety. The stalks are of a mild, delicate flavor, a brilliant red in color, and of immense size. A single stalk including the leaf will often measure forty inches, and the stalk alone weighs half a pound. In planting, the ground is made mellow to the depth of two feet or more and heavily dressed.

It is better to leave new plants undisturbed for a year or two, for close picking retards the growth. Every autumn the plants should be covered a foot deep with coarse stable manure, and in the spring the top of the old dressing should be raked off and a new lot of well-rotted manure put on. As soon as the leaves show a few inches above the ground each plant should be covered with a barrel sawed in two and the ends knocked out. Nail the hoops firmly to the staves, or the half barrel will fall to pieces before the summer is over. This is kept about the plant until it is time to give the autumn covering. A half barrel shades the roots, keeps the ground moist, and in the effort to spread their leaves to the light the stalks grow to an enormous length. Nothing is gained, however, by using a whole barrel, for the stalks grow thin and the plant is not so healthy. Under this treatment rhubarb is as crisp and tender in

August and September as in early spring. All blossom buds should be cut off as soon as they appear, and in gathering the stalks they should not be cut but pulled, by taking hold of the stem low down in the barrel and giving a quick, strong tug. This loosens the stalk with its sheath-shaped base and leaves the plant uninjured.

A Conservatory Built Around a Cellar Door

By Edith L. Fullerton, Long Island

A SMALL conservatory had always been our hearts' desire. We found a rather odd combination in our old Long Island home which gave us one. I must confess we should be without one now had not a good deal of ingenuity been used.

The south hall door opens upon a small porch, with the outside cellar door under part of its roof. One French window also opens on to it. The floor of this porch was directly on the ground and, as the boards had rotted away, we removed them, substituting a floor of cement.

The cellar is low, and a modern furnace heated it beyond the point of wisdom. We sought an outlet for the heat, and immediately the conservatory shaped itself. By enclosing the small porch in glass and removing the

outside cellar doors, the heat from the cellar would be released and the conservatory warmed. By leaving the hall door open and removing the French windows from the living room, we gained more heat and better ventilation.

The method of enclosing the porch was a matter for much consideration. Our desire was to have as much glass and as little wood as was possible for strength and durability. We also desired the glass panes to butt and not be puttied. It was necessary to have a door in front of the cellar door for the removal of coal ashes, and transoms for ventilation. With this general plan the work was begun. A heavy timber was run along the floor and bolted at the corners (the conservatory must disappear in summer time). A corresponding timber ran along the edge of the porch ceiling. Uprights were then placed at certain intervals, and these were grooved to admit of the glass sliding down them. We

had a large number of 11 x 14 photographic plates, which had been shipped during a rain storm and had become thoroughly soaked. They were of course useless except as glass, and these, freed from the gelatin, made the glass panes for our conservatory.

As there would be too much sunlight for the plants in this protected corner, curtains of unbleached muslin were arranged for; the rollers, four and five feet long, respectively, were of tin. These were set at the bottom, along the beam, and the curtains drawn up by means of a sash cord and pullies. Thus could the plants be shaded, while the sunlight was let in higher up.

Two trays about table height were constructed. They were four inches deep, to admit of sand in them in which to sink the pots. A shelf was made about two inches from the floor on these tray tables, and made an admirable place for seed boxes and for starting bulbs.

There was great rejoicing when the "garden room," as I love to call it, was completed, for it was my winter garden, and I unconsciously gravitated toward it many times a day.

We found the curtains insufficient protection from the sun, so we coated the outside with a wash to keep off the direct rays.

As for the heating, there was ample, and our cellar was kept in the finest condition. When the thermometer registered four below zero out of doors, the conservatory registered 56°.

Again, fortune favored us in the watering scheme. The outside attachment for the hose had been placed over the cellar door, and the hose reel beside it, therefore our sprinkling apparatus was right at hand.

Another item delighted my soul—by closing the doors we could burn nicotine punk and rid the plants of insects.

The cost of this structure was:

Labor	\$31.00
Lumber	16.42
Corner iron work	1.00
Hardware	4.00
Door	3.50
Sash cord .....	.35

Total



The unpromising proposition we started with. The cellar door and a bit of the porch



Outside the conservatory; showing the door opening into it, and the coated glass

The labor included cutting glass and placing it in the frames where it was needed.

The flowers thrived beautifully, our favorites for the winter time being the Dutch bulbs.



Looking into the garden from the dining-room door. Flowers inside; a snowstorm without

while we raised radishes in February, lettuce in March, and had pansy and tomato plants ready to set out when spring opened.

A Late Garden Made from a Refuse Heap

A. BOWEN, Michigan

IT was a sorry looking place in the spring. There were sticks, stones, bricks, dirty old matting, plumbers' refuse, tall weeds—it was full of rubbish. Nothing was done to it until July 6th, when I cleaned it out partially, spaded it and raked it. The tall buildings shut out all sunshine, except from one till three o'clock, and the soil was poor, yet we had green tomatoes, string beans, lettuce, radishes, onions and flowers, before the end of the season.



Starting radishes and lettuce in flats for early crops



Showing the construction of the wooden trays that hold the flower pots



The curtain of cheesecloth, raised to keep the strong sun from scorching the delicate plants

Planting a Country Place for Winter—By James Wood New York

HOW WINDBREAKS MAY BE ARRANGED TO SHELTER THE HOUSE, AVOID SNOW-DRIFTS, AND PROVIDE A WINTER WALK—SUGGESTIONS FOR MAKING ATTRACTIVE WINTER VIEWS, PROVIDING CHEERY BITS OF COLOR, AND ATTRACTING THE BIRDS

THE method of planting a country place depends chiefly upon the purpose that animates that place. It may be a farm where business interests are prominent; it may be a gentleman's residence to be occupied throughout the year; or it may be for summer rest and enjoyment. The place should be planted to best meet its particular purpose.

For summer use the house should receive the unobstructed southwest wind, which brings such refreshment into "the twilight of the sultry day," and open lawns and flowers and cooling shade should combine their attractions. Upon the farm beauty, convenience and utility should be brought into harmonious relation, while for the all-year residence particular attention should be given to winter comfort and enjoyment. Indeed the all-year home requires more skill for its proper planting than does any other, for the requirements of every season must be considered.

Every season has its peculiar charms for the eye that can see them, but dear old winter seems to require more attention to arrangement to bring out its beauties than

do the others. Its biting blasts must be broken and tempered, its drifting snows must be regulated, its feeble sunshine must be conserved, the mellow autumn must be kept as long as possible and the returning spring must be encouraged to hasten its coming, while during the time of its undisputable sway we must set out in fairest display its charms of snowflakes and ice crystals and white mantles.

A FREEZING MAN HAS NO EYE FOR BEAUTY

In planting for winter, comfort must receive the first consideration. The rude north wind must have its force broken. This may be accomplished by planting evergreens for windbreaks. But it is best to attain the end without the formal array of a straight border, which is often too assertive. The outbuildings should be placed to do part of the work, but so as not to show too plainly that this was in view. Between the buildings groups of evergreens may be placed, so as to make a pleasing variety, add a beauty of their own and effectually complete the windbreaking circuit. In all our Northern states the northwest wind is

the enemy whose assaults must be guarded against. But we have severe winds from the north and northeast, and these points should also be effectually covered. It requires not a little study to do this without formality, but by using natural elevations where there are any, and arranging buildings and plantings with due relation to each other, utility and beauty may join hands very successfully.

Snowdrifts should be considered, as well as the direct force of winds. These often cause much inconvenience, but they are the creatures of well-known conditions and may be easily guarded against. They are never made for a considerable distance in the lee of a belt of evergreens. In almost any situation this may be readily controlled. As a rule, the places where snow will drift can only be known by experience, but whether it will accumulate in a given space or not one may insure against by proper planting.

The lee of windbreaks should be utilized for special purposes. Where there is considerable length, there should be made a winter pleasure walk. We need open air exercise, and "the winter walk at noon" has great possibilities for enjoyment. The wind



The winter dreariness of a wind-swept tract. No suggestion of comfort here. Compare with the cozy suggestiveness of the picture on the next page



The evergreens give warmth and comfort in the depth of winter when the snow hangs over all

may rage beyond the belt of evergreens, but here is peace and warmth.

"The night was winter in his roughest mood;
The morning sharp and clear. But now at noon
Upon the southern side of the slant hills,
And where the trees fence off the northern blast,
The season smiles, resigning all its rage,
And has the warmth of May."

Here the line of coldframes may be placed, for here the morning and the mid-day sun will have a force not found elsewhere. The genial sun seems to love such situations. The growing plants within the frames will add other forecasts of springtime, always sweet in winter days. These plantings to shield from wind may be extended to protect an entire lawn of many acres in extent.

WHAT TREES ARE BEST

There are two of greatest value—the Norway spruce and the American hemlock. Both are of rapid growth, are completely hardy, and of pleasing appearance. Our hemlock is one of the most beautiful evergreens found anywhere. It is stately in form, its branches are graceful, its foliage is fine in texture and dark and rich in color. The Norway spruce has done well in America. It would be difficult to find specimens in its native land to compare in beauty with thousands among the older plantings in New England and the Middle States. There is a great difference in their habit of growth as they attain large size. Some are stiff and unattractive, while others have pendant lateral branches and are very graceful in appearance.

Our white pine is a grand tree, that becomes very picturesque in old age. It should have a good place in winter planting.

But there are other matters to be considered beside protection from winds, and the diversion of drifting snows. We want pleasant outlooks. The winter vista is more important than the summer, because there are then fewer attractions to please the eye. There are two points of view that should be carefully considered, so that each may have the best the place affords. One is the approach to the house, preferably from the drive, just as the house is reached, or it may be from the steps at the front entrance. You may have been familiar with the view all your life, but it will gladden your gaze and tingle your blood when you reach your home, while the visitor will experience a pleasant greeting, even before the host has welcomed him. The other point is from the windows from which you most frequently look—it may be from the library, or the dining room, or the "living room." If your place has any charming view, be careful to make your plantings so as to give the best to these two points. Scarcely less important are the windows of your dressing rooms. The day starts the better when we look out upon pleasant scenes in the morning. The windows of the nursery should have consideration, too.

These vistas for winter effect should be bordered by irregular groupings of both evergreens and deciduous trees, with clumps of rhododendrons and mahonias, hollies

and alders, to give variety—"with each its added charm." If the vista leads to wooded hills and gentle, snow-covered slopes, it will always be a joy.

But there are many things to consider in winter planting. It is always pleasing to look away underneath large evergreens, with their branches gracefully bending under the weight of clinging snow. Here birds like to gather for shelter, and if there are pheasants upon the place, you may here tempt them with scattered grain, so that they may be often seen upon these feeding grounds. But other birds should be enticed within your view. Opposite a convenient window there should be a tree where beef or mutton bones may be hung, to which a fascinating company of nuthatches and chick-a-dees, will come to pick the clinging meat scraps.

Plant those varieties of deciduous trees that are beautiful when bare of leaves. All the birches have fine twigs that show beautifully against the winter sky. The weeping cut-leaved birch is a charming winter tree; so, too, is the American beech, with its leader arms and graceful twigs and branches. The English beech, which is worthy of more attention in America than it has received, carries its rich brown leaves quite through the winter. Some people like this, and some do not, but it makes an interesting variety.

SHRUBS FOR WINTER EFFECT

The rhododendron takes first place among winter shrubs. Its great, rich, glossy leaves are very beautiful, except when, in very low



THE WINTER COMFORT OF A HOME NESTLED AMONG THE TREES

temperatures, they curl up for their own protection.

The holly (*Ilex opaca*) is very striking, with its dark green foliage and bright red berries. It is grown successfully up to latitude 41°. The berries retain their color through the winter. The ashberry mahonia (*Berberis Aquifolium*) is a very good evergreen shrub, and its foliage is valuable for table decoration. Its yellow flowers are attractive in springtime. The mahonia makes a charming border to a clump of rhododendrons, and is

exactly in place along the belt-sheltered winter walk. The foliage becomes somewhat marred by early spring.

Among deciduous shrubs not half enough is made of the wild black alder (*Ilex verticillata*). It loses its leaves late in autumn and reveals its wealth of brilliant scarlet berries, which retain their wondrous beauty past midwinter.

Of bulbs, the autumn crocus (*Colchicum autumnale*) brightens the November days, while the snowdrops and the common crocus should border the sheltered winter

walks, to greet us with "Spring is here." There are many other trees and shrubs that may be advantageously used for winter effect, as the English ivy, anywhere south of New York and in favored localities farther north. It is better suited to trees and rocks than to house walls. But we have named enough to indicate how many may be used. Fortunate are they who have country places for winter enjoyment, doubly fortunate they who have eyes that make the most of winter's charms.

Trees and Shrubs for Color in Winter

SELECTIONS OF THE BEST KINDS THAT WILL GIVE COMFORT ABOUT THE HOME ON ACCOUNT OF THE COLOR EFFECT OF THEIR FRUIT OR BARK. BY LEADING PARK SUPERINTENDENTS, LANDSCAPE GARDENERS AND OTHERS

Compiled from information supplied by John Dunbar, J. W. Duncan, J. Jensen, H. J. Koehler, E. Mische, C. J. Molloy, J. W. Oliver, P. J. Berckmans, and E. N. Reasoner.

The Latin name is given here so as to insure accuracy in the identity of the plants in question.

I. PLANTS GROWN FOR THEIR FRUIT

SCARLET FRUITS—TREES

Ilex opaca can generally be relied upon to hold its fruits until after Christmas, but even that drops its berries in Western New York (Rochester). *Ilex verticillata* is the only tree or shrub that can be relied upon in that section to carry its red berries over Christmas. *Pyracantha coccinea* is good south of New England. In the South: *Ilex Dahoon*, *Cornus florida*, *Arbutus Unedo*, *Rhus typhina*, and *Rhamnus Caroliniana*.

SCARLET FRUITS—SHRUBS

Berberis Thunbergii, *Sibirica* and *vulgaris*. *Benzoin oderiferum*. *Celastrus orbiculatus*. *Ilex verticillata*, *opaca* and *laevigata*. *Lonicera bella*, var. *albida*, and var. *candida*. *Lonicera Ruprechtiana*. *Pyracantha coccinea* (not reliably hardy in New England). *Rosa rugosa*, *multiflora* and *setigera*. *Rhus typhina*. *Symphoricarpos vulgaris*.

For the South: *Ardisia crenulata*. *Rhus copallina*.

YELLOW FRUITS

Cydonia Japonica and *Maulei*. *Eriobotrya Japonica*. *Hippophae rhamnoides*. *Ilex verticillata*, var. *fructu luteo*. *Melia Azedarach*. *Viburnum Opulus*.

GRAY FRUITS

Clethra alnifolia. *Cornus candidissima*. *Elæagnus angustifolia*. *Fagus ferruginea*. *Myrica cerifera*.

WHITE FRUITS

Symphoricarpos racemosus and *occidentalis* (the snowberries), are well known for their white fruits. Of other plants there are white-fruited varieties of the common privet and of *callicarpa*.

For the South only, *Sapium sebiferum* and *Ardisia crenulata*, var. *alba*.

ORANGE FRUITS

Citrus trifoliata. *Cydonia Japonica*. *Crataegus orientalis*. *Duranta Plumieri* (large

evergreen shrub, for the extreme South only). *Ilex aquifolium*, var. *fructo aurantiaco*. *Lonicera Morrowi*. *Pyracantha coccinea*, var. *Lalandi*. *Rosa pendulina*, *Arkansana*, *acicularis* and *blanda*. *Sapindus marginatus*.

BLUE AND BLuish FRUITS

Callicarpa purpurea and *Americana*. *Cornus sanguinea*. *Juniperus Virginiana*. *Berberis Japonicum* and *Aquifolium*. *Viburnum nudum* and *dentatum*.

For the South: *Aralia spinosa*. *Nyssa sylvatica*. *Symphoricarpos vulgaris*, var. *glomeratus*. *Prunus maritima* (rose purple).

BLACK FRUITS

Crataegus Douglasi and *nigra*. *Ligustrum vulgare*, *Ibota* and *Regelianum*. *Sambucus Canadensis*. *Viburnum rugosum* and *Lentago*. *Rhamnus cathartica* and *Dahurica*.

For the South: *Rhamnus lanceolata*. *Viburnum prunifolium*, *acerifolium* and *pubescens*. *Ardisia polycephala* and *Pickeringi*. *Ilex glabra*.

VINES FOR WINTER FRUIT

Cocculus Carolinus (bright red berries all winter). *Celastrus scandens* and *paniculatus* (yellow and red). *Euonymus radicans* (yellow and red). *Gaultheria procumbens* (scarlet). *Lycium halimifolium* and *Chinense* (red). *Mitchella repens* (red). *Rhus Toxicodendron* (gray).

II. PLANTS GROWN FOR THEIR BARK

In growing for winter effect it should be remembered that the color is invariably brighter on the young growths, and for that reason severe pruning—even to the extent of cutting right down to the ground—is often desirable. This extreme will be resorted to only close to the house, where the shrubbery are regarded very much in the light of flower beds.

GRAY OR WHITISH TREES

Acer Pennsylvanicum (white and green). *Betula populifolia*, *alba*, var. *pendula laciniata*

and *papyrifera*. *Cornus candidissima*. *Dier-villa florida*. *Deutzia gracilis*. *Fagus ferruginea*. *Hydrangea quercifolia*. *Juglans cinerea*. *Lonicera Tartarica*. *Magnolia glauca*. *Oxydendrum arboreum*. *Philadelphus Gordonianus*. *Populus alba*, *canescens*, *grandidentata*, *tremula* and *tremuloides*. *Symphoricarpos racemosus*.

BRIGHT GREEN TWIGs

Acer Pennsylvanicum. *Citrus trifoliata*. *Euonymus Europæus* and *atropurpureus*. *Fraxinus lanceolata*. *Jasminum nudiflorum* (not reliably hardy). *Kerria Japonica*. *Laurus Sassajras* (young shoots). *Parkinsonia aculeata*. *Salix pentandra*. *Sterculia platanifolia*.

RED BARK

Betula nigra. *Cornus stolonifera*, *Sibirica sanguinea*, *Amonum florida* and *circinata*. *Rosa lucida*. *Salix vitellina*, var. *Britzensis*, *palmaefolia*, *purpurea* and *alba*. *Tilia platyphyllos*, var. *rubra*.

YELLOW BARK

Cornus stolonifera, var. *flaviramea*. *For-sythia suspensa*, var. *Fortunei*, *viridissima* and *intermedia*. *Fraxinus excelsior*, var. *aurea*. *Kerria Japonica*, var. *aureo-vittatis*. *Rosa lucida*, var. *alba*. *Salix vitellina*, var. *aurea*. *Salix Babylonica*, var. *aurea*, *alba* and *pentandra*.

III. FOR WINTER FOLIAGE AND FLOWER

DECIDUOUS FOLIAGE THAT LASTS UNTIL CHRISTMAS

In the North: Red and scarlet oak, occasionally, also young trees of English oak, young trees of European beech (*Fagus sylvatica*), and at times the American beech (*F. ferruginea*). *Quercus alba* (brown). *Ligustrum ovalifolium* and *Sinense*; *Lonicera Halleana* (greenish).

For the South: *Berberis Thunbergii*. *Prunus Pissardi* (red). *Liquidambar styraciflua* (yellow). *Rosmarinus officinalis*; *Tamarix juniperina*; *Quercus Virginiana* and *Phellos* (greenish).

House Plants for Christmas Presents—By James T. Scott New York

HOW TO SELECT KINDS THAT WILL LAST ANOTHER YEAR, INSTEAD OF DYING IN A FORTNIGHT—WHAT TO DO WITH THEM DURING AND AFTER THE HOLIDAYS

GROWING plants, in pots, are far more satisfactory than cut flowers for Christmas presents. They cost about the same, but the latter will quickly fade, while the former live and, with due care and attention, grow better.

WHEN AND HOW TO BUY

If you want the best plants the market offers, be early. Make your selections at least five or six days before the holidays. The stores always have samples enough on hand about that time to give you an idea of what you are likely to get. An early selection means a greater variety to choose from, besides saving much confusion and disappointment in the ultimate rush. There is the matter of packing. When left until the last minute, this has to be done hurriedly, and (with the severe weather usually prevailing at that time) is often done insufficiently. Give the florist a clear idea of what the plants are to be used for and where they will be placed.

WHERE TO BUY

Other things being equal, it is better to buy plants near one's home than to travel afar. Do not be tempted even by cheap offers to go miles away, for, counting carfares, packing, expressage and lost time, the ultimate cost is very likely to be more than if you had paid a good deal higher price at home. Of course it may happen that one grower or florist has a large stock of some one thing and can sell at a low rate, but dealers usually have an understanding with one another, especially regarding holiday prices, and for weeks before the holiday season they have been balancing stock with each other, so that the better

quality plants are of an almost fixed value. Any specially low price is nearly always associated with a correspondingly low grade in the plants offered. A byword among dealers in plants is: "If you have to shade your price, you can always shade your stock." Plants differ from ordinary merchandise in the risk of damage during transit. They may be frozen or injured during delivery and still not show the effects for a day or two, perhaps not until after the bill has been paid. A reputable dealer always assumes the risk, and will replace the damaged specimens.

WHAT TO BUY

Don't buy anything that has every flower expanded. If a few of the flowers are open, that is sufficient. Every bud will open in due course and the life of your plant's beauty will be prolonged, and, moreover, a plant in bud will stand the necessary handling much better than one in full flower.

A BEGONIA THAT IS ALWAYS IN FLOWER

Perhaps the best flowering plant for Christmas is the Gloire de Lorraine begonia. I say this because the plant is always in flower—not a few blooms, but whole sheets of bright pink. It is an interesting plant because of the mystery of its cultural requirements during the growing season. When first introduced a few years ago many florists tried to grow the plant and gave it up in despair, but a few succeeded. When offered at the holiday season it became at once the great favorite, and it is now a popular plant all over the country. The price has fallen considerably, and now well-grown, shapely plants of good size can be procured for \$2.50.

A white variety of this, which is called Turnford Hall, is of more recent introduction, but it will never be so popular as the original. White is not a Christmas color, and it is largely the color that enhances the value of Gloire de Lorraine. It is a dark glistening pink and the flowers hang down in great clusters, covering the pot; so dense and profuse are the flowers that scarcely a bit of green can be seen when the plant is in full bloom. The dry atmosphere of the living room suits it well. When in flower a temperature of 55° is best, but ten degrees either more or less will do it no harm. I have known Gloire de Lorraine to retain its bloom in a house for three months. When in full vigor it requires an abundant supply of water, but don't spray overhead, as that causes spots on both foliage and flowers. That is the one important thing to know about this plant.

When flowering is over give less water, but do not dry off entirely. Cut off all the old flowering tips and keep the plants in a semi-resting condition. About May or June shake off part of the old soil and repot in a fresh mold, rich, but of light texture. Grow on in a warm place shaded from the direct rays of the sun. Water as in the case of any other plant, but still remember that overhead spraying will be injurious. By care and attention your begonia will blossom forth again next Christmas.

THE ONLY REAL EVER-FLOWERING ROSE

The delightful little ever-flowering rose, Madame Norbert Levasseur, has been well named "The Baby Rambler," for it is to be likened to nothing so much as the ubiquitous



The best feathery white-flowered Christmas plant is *Astilbe Japonica*, sometimes called *Spiraea Japonica* in the stores. Plant out in the garden after cold weather has passed



The lemon-scented verbena (*Aloysia citrodora*) is worth having for the fragrant leaves. Its flowers, which are not worth considering, are produced outdoors in summertime



The Paris daisy, or Marguerite, is the best of all the daisy-like flowers for hall decoration. It flowers three times in the year and is one of the most satisfactory of all. Inexpensive too!



The cyclamen flowers last longer than those of any other of the Christmas plants if kept in a cool room. Can be grown in the window garden all the year

Crimson Rambler of our summer gardens. It is of dwarf habit, and the flowers are borne in clusters. It is the only rose yet introduced that can honestly be called an ever-blooming rose. Plants grown in pots indoors have actually been in bloom for twelve months.

Every young growth that the plants make throws a cluster of bloom at the point, and before that has quite faded other shoots develop in the leaf axils, and in turn produce flowers. This is carried on indefinitely.

Like every other rose, it is likely to be attacked by the red spider, but this can be kept in subjection by occasional syringing. A sunny window, with a winter temperature

of 55 to 65 degrees, will be found best for its well-being.

This is the only rose that can be honestly called a "pot rose." Of course other roses can be grown in pots, but they are so unsatisfactory that no one cares to trouble with them. The Baby Rambler seems to do better with pot culture indoors than elsewhere, and it is practically the only pot rose that can be had in flower for Christmas.

When warm weather comes again they can be planted outdoors, and indeed are perfectly hardy if allowed to ripen naturally, but if planted outdoors in a green state, in freezing weather, they will be killed. A few plants of this rose make a very pretty bed in the garden after they have been used indoors, but if it is desired to have them in flower again for another Christmas a slightly different procedure is necessary. In this case, if one does not want to keep them in the house all summer, plunge them in their pots—that is, put the pot and all in the ground. Treated thus outdoors they require less attention, and they can be readily lifted again before freezing weather. Most roses seem to do best when allowed to freeze and rest for some time, but it does not seem necessary in this case, for the same results can be expected, whether rested or not. As this is a new plant, it is still somewhat expensive. Flowering plants for Christmas will cost from \$1 to \$2.50 each, according to size.

THE MOST SHOWY CHRISTMAS PLANT

As flowering plants, the season of usefulness of the showy Indian azaleas is short, but few things give the same rich effect so long as they last, and if wanted only to brighten the home for the holidays few things will be found to give such good returns. There are only one or two early varieties that can be had in flower by Christmas. These are



Rhododendrons are not so easily flowered for Christmas as azaleas (see page 209), nor are they so brightly colored. Better keep them as outdoor plants in shady borders

Apollo (orange scarlet), Deutsche Perle (white), Simon Mardner (bright rose), and Vervaeneana (white, with salmon and carmine markings), a most beautiful variety.

These plants are expensive when bought in a flower store at the holiday time. A plant of azalea in full bloom that will cost \$2.50 at Christmas time can be bought a month earlier for half that price, and the careful purchaser will take advantage of this fact. If the right variety be procured, no trouble will be experienced in having it in flower at the right time. The buds for Christmas flowering are ready long before, and can be held in check in the house for say one or two weeks, according as the plants are kept in a warm or cool



The dwarf Jerusalem cherry has bright scarlet berries three-quarters of an inch in diameter. The plant will drop both leaves and fruit if the air of the room is not pure



The Spotted laurel (*Aucuba Japonica*) with its large, deep-red berries is the joy of English and Southern gardens. Must be grown indoors in the North for winter. Staminate and pistillate plants are separate



The great merit of the spear flower (*Ardisia crenulata*) is that the berries remain fresh for twelve months. The seeds germinate easily, but the plant grows very slowly. Place outdoors all summer

THREE RED-BERRIED PLANTS FOR HOLIDAY CHEER



Start a few bulbs of the Chinese sacred lily (*Narcissus tazetta*). They will make welcome presents in this stage, and the attention until they flower will be a constant reminder of the giver

place. There is no need to pay the higher price. Get one of the varieties named above and no trouble will be experienced.

After flowering keep the plants from freezing, and when the weather gets warmer, say about May 20th, plant them outdoors. Water well all summer, and syringe regularly for red spider, etc. In the fall, before frost, lift and repot for next Christmas flowering.

CALLA LILIES AN ENTIRE SEASON

Though the flowers may be stiff and the foliage coarse, compared with begonias, azaleas, etc., yet the African calla (*Richardia africana*) is nevertheless one of the most useful of house plants. It grows by means of creeping underground veins, called rhizomes (not bulbs), which can be bought for very little (fifteen to twenty-five cents each). They start readily when potted up in an ordinary soil and placed in a window. Two or three rhizomes in one pot (say a six-inch pot) give the best results, and, when once established and kept growing on, they will bloom at intervals throughout the whole season. Their bright green leaves enliven a dwelling house at all times, and in many ways they are preferable to palms.

Besides the well-known white calla, there are several others worth a place. The dwarf-habited *R. africana*, var. *nana compacta*, the little gem of the trade, resembles the larger growing type in every detail except in habit and growth. It is much smaller and more compact. This is perhaps the best of all the callas for house work. *Richardia Elliottiana* and *R. Pentlandii* have yellow flowers and are more expensive than the others. The former has a white spotted leaf and is the better known, but *Pentlandii* has a deeper, richer color.

The common spotted calla (*R. albomaculata*) is rather curious than beautiful. There are sufficient of these to make a very interesting collection, and if one window of the house were devoted to them exclusively

there would always be some flower in it, from one or another of the species.

Callas are naturally bog plants, and require abundance of water at all times. In summer, when evaporation is great, the saucers in which they stand may be kept always full, but in winter this is not necessary. In fact, during the dull days the more air that can circulate through the soil the better.

Nearly every person you meet has his own peculiar way of treating these plants after they have done their winter service, which only goes to show that callas are among the easiest of all house plants to manage. I have given most of the ways a fair trial, and have not found enough difference to warrant the exclusive recommendation of any.

If the calla is wanted for a house plant the whole year through, all you have to do is to "keep it growing," only repot in fresh soil and a larger pot in August or September. If



Have something out of the ordinary rut! Mint on Christmas day. It is as easy to grow as parsley, so why be satisfied with the dried stuff?

you have to leave your plants to the tender mercies of someone else during the summer months you can knock them out of their pots and plant them out in the garden, when they will take care of themselves and be ready for lifting and potting again in August or September for winter blooming.

Even if you have no garden you can keep them over the summer. Lay the pots on their sides in a shady place for a few months. The soil will become quite dry, but the rhizomes will not suffer. In the fall, shake off the old soil and repot in fresh mold, just as you would in the case of newly purchased roots or bulbs.

A DAISY THAT FLOWERS THREE TIMES A YEAR

For sheets of white or pale yellow bloom at a cheap price, the Marguerite or Paris Daisy (*Chrysanthemum frutescens*) is unequalled. It can be had in good plants at Christmas time, from seventy cents up. There are several varieties in both colors. The best of the newer ones are Coronation and Queen Alexandra. Coronation is better than the

old Paris Daisy, because its flowers are more dazzlingly white and are produced in greater profusion. The Queen Alexandra variety is anemone flowered; that is, the white ray petals of the outer whorl are as in the ordinary form, but the centre (or disc) consists of a cluster of tubular florets, which are also white. They form a rounded cushion, about which the ray or outer petals set as a frill. It resembles the anemone-flowered chrysanthemum in every particular.

The Marguerites remain in bloom for several months at a time, and flower two or three times during the year. If kept in a cold room during winter (a temperature of 55° suits them best) they will positively thrive. When summer comes plant them outdoors and they will give abundance of bloom to cut from. They propagate as readily as geraniums. Cuttings taken from the old plants in July or August will make good flowering plants for the following winter. They are not subject to diseases of any kind, and are practically immune from insect attacks.

A SHORT-LIVED BUT EFFECTIVE FLOWERING PLANT

The best gorgeous yellow plant is the genista (*Cytisus racemosus* and *C. Canariensis*), but its great drawback is that the flowers do not last long, and unless wanted for a special occasion they do not make satisfactory house plants. While they are in flower, however, they are beautiful, being one mass of small yellow pea-like flowers. After treatment is the same as recommended for azaleas.

Poinsettias, crotons, and dracaenas also belong to the unsatisfactory class. They are very beautiful while they last, but the temperature and atmosphere of the ordinary living room do not suit their requirements.



The most aristocratic looking of all the bulbs, *Hippeastrum aulicum*, or amaryllis of the florists, flowers best when grown in pots. The bulbs should be started into growth after the first of January

They soon lose their leaves, and are then eyesores rather than things of beauty.

BULBS THAT BLOOM THE WINTER THROUGH

There are very few bulbous plants that can be had in flower in the ordinary dwelling at Christmas. Lots of them can be found at the florists', but they have been unduly forced, and will last only a few days when taken out of the warm, humid atmosphere of the greenhouse. There are a few exceptions, however. Roman hyacinths, paper-white narcissus and Chinese sacred lily, if potted up early, will come into bloom by Christmas under normal conditions. These bulbs can be purchased at two, three and four cents each, and make a very fine display if planted four or six in a 6-inch pot. It is really quite easy to manage these bulbs; if potted in September and placed in an ordinary cellar, beyond the reach of frost and away from the drying heat of the furnace, covered over with any moisture-retaining substance, such as leaves, moss or litter, until such time as the pots are well filled with roots, and then brought into light and warmth, they will give a wealth of bloom the whole winter through. The season of flowering is regulated by the time of the removal from the dark, cool cellar into light and warmth.

Tulips and Dutch hyacinths can be treated the same way, but it is almost impossible to get them into flower before February or March, and if you do get them the result is never really satisfactory. The Chinese sacred lily is nearly always grown in glass dishes, with water and pebbles as a medium to root in. But it can be grown just as successfully in soil. On the other hand, the paper-white polyanthus narcissus, that is usually grown in soil, can be grown just as successfully in stones and water.

Hyacinths for succession can be grown in the same way, only they are so top heavy when in flower that in such a dish it is hard to find a means of support. Growing bulbs in



Three gay foliage plants that will relieve the plain and simple greens. From left to right they are, croton (*Codiaeum*), yellow and green; dracaena, red; and screw pine (*Pandanus*), green and white. Crotons and dracaenas come in many varieties

water is simplicity itself. Fill up any old dish with stones and gravel and a few pieces of charcoal, and then fill in with water to within a quarter of an inch of the top. Place your bulbs in the gravel—not on it—with several big pieces of stone between them to keep them in place. If the base of the bulb touches the water it is liable to decay, therefore have them just deep enough to be firm, and as near as possible without touching. Put in a dark place until well rooted, but after the tops begin to grow give them light. They can always be retarded in a cool place, but if kept too long in the dark they will become drawn and pale and never regain their natural strength.

Flowering plants of any description want more or less sunlight at all times. This is not always possible in a dwelling house. There are shady windows and odd corners in every home, and usually these are the places that are most in need of something growing to brighten them. For such situations some of the foliage plants must be used, and fortunately there is an abundance of good things to choose from. Few people seem to know that the shield flower (*Aspidistra lurida*) and its golden striped variety (*A. lurida*, var. *variegata*) are unquestionably the hardiest of all such plants. There is nothing in cultivation to-day that will stand such hard usage and survive in such untoward environment. As these plants are propagated only by division, and growth is slow, they are expensive, and that may account for their comparative neglect. They are usually sold at so much a leaf, fifteen cents per leaf being a fair price. It takes a good many leaves, however, to make a handsome plant, and anything that costs less than \$2.50 is hardly worth having. The variegated form is just a trifle more expensive than the green type.

Next in hardiness to the aspidistra is the new fiddle-leaved rubber (*Ficus pandurata*). A bold-growing plant, with leaves larger than those of the common plant and darker green, this newcomer is even harder than the old-time rubber, but good plants are worth \$15.

The ground rattan palm (*Rhapis*) must be considered where the chief object in view

is the ability to stand ill-usage. None of these plants are graceful, but they are recommended for their toughness.

Of the very graceful palms, the best are the Howeas or, as they are commonly called by the florists, Kentias, which will withstand any ordinary usage. They are suitable for the drawing room or dining room, but should not be kept in too dark a corner. The prices of these vary greatly, according to the size, ranging from seventy-five cents to as many dollars, or even more, for exceptionally large plants. These large ones cost more because they are very slow growing. As house plants, where they can get light they are quite satisfactory and will grow for years. There are two species commonly in the trade—the curly palm (*H. Belmoreana*), the more erect growing, and the thatch palm (*H. Forsteriana*), with flat or spreading leaves.

All these plants, with their broad green leaves, get dusty very readily, and should be sponged off once a week with water containing a very little Ivory soap. It does not injure the tissues. Just enough soap is needed to soften the water; by no means enough to color it.

The lighter foliage effects of the screw pine are worth a place. I know of one (*Pandanus Veitchii*) that was raised in a dwelling house from a small side shoot five years ago and has been kept there ever since. It is now a beautiful specimen, as good as will be found in most greenhouses. These pines are easy enough to keep over winter if watered very sparingly, otherwise the roots will rot. Take care also that no water gets into the centre of the plant, because if this happens the centre or growing tip will rot.

The Norfolk Island pine (*Araucaria excelsa*) is a house plant of considerable merit and charms because of its rigid formality—a little fir tree quite distinct from anything else among the house plants.

There are but few ferns that can be relied upon to give satisfaction in a home. Unques-



Something different from the ordinary every-day palms and more graceful. Why not try a novelty once in a while? (*Kentia Sanderiana*)



The charm of the Norfolk Island pine (*Araucaria excelsa*) is its formal habit. One of the best all-round house plants, growing well in the window all the year



THE BEST FLOWERING PLANT FOR CHRISTMAS BEGONIA GLOIRE DE LORRAINE.

The flowers are bright pink and are produced with such luxurious profusion that they completely hide the leaves. When introduced a few years ago nearly all the florists failed to grow it because it was an entirely new type of plant. Give it a moderately warm room and plenty of water, but never spray it. After flowering cut back and give less water. In May re-pot and grow in a warm, shaded place, watering like a geranium, and it will flower again next Christmas. When grown thus it is very easy to manage.

tionably the best, from all standpoints, is the Boston fern and its now numerous varieties. They will succeed well in a room that is comfortably warm, but prefer a temperature of 60°. They like full sunlight in winter, though they will stand in a very shady corner for a time. They should not, however, be left there long, or the leaves will turn yellow and drop. If you have several plants, keep changing them around from place to place, so that none will suffer unduly.

You can give the baby a drink at regular intervals, but the weather, atmosphere and temperature of a room vary so much that no such rule can be applied to watering house plants. The different families of plants also vary, some requiring a drier and some a wetter soil than others. On general principles, when you strike the pot sharply with your thumb nail or some hard implement and the sound is sharp and clear, the plant needs water; if dull, it is wet enough. Again, take some of the earth from the pot and squeeze it between your finger and thumb; if it feels soft and spongy or adheres in a mass, it needs no water; but if it falls apart, give a good watering. Mark, when "a good watering"

is spoken of, I do not mean two tablespoonfuls, but as much as a teacupful to a 6-inch pot, and more or less, according to the size of the pot.

The keeping of house plants in saucers is necessary for cleanliness, but as soon as the water has soaked through the saucer should be emptied. The hole in the bottom of the pot is not there for drainage only; it is meant also for an air passage. It is well to raise the bottom of the pot a little above the bottom of the saucer, by standing it on a few pieces of broken pot or other material.

Notes of warning are often heard about the bad effects which accrue from having plants in our living rooms. Such talk is exaggerated. It may not be advisable to have a lot of plants in a sleeping room, however, as assimilation stops when the sun goes down. The effect would be the same as if a number of people were to sleep in one room.

All plants that have their pots full of roots and are in a healthy condition are benefited by feeding. But a healthy condition is necessary. No sickly plant can survive on a strong diet any more than can a dyspeptic, but this sickly condition of plants is often brought



Primula obconica will flower nearly all the year, but its lilac flowers are small. The foliage poisons some people, which has lessened its popularity

about by lack of nourishment, and feeding is then necessary.

Chemical fertilizers will enable you to have smaller pots than would otherwise be necessary, and for house plants large pots are especially cumbersome. Plants fed regularly with chemical manure can be kept healthy in a pot one-half the size that would otherwise be needed. The feeding of plants in pots must always be done very carefully, and at the proper time. Don't give doses of food when the plants are just past their periods of most active growth.

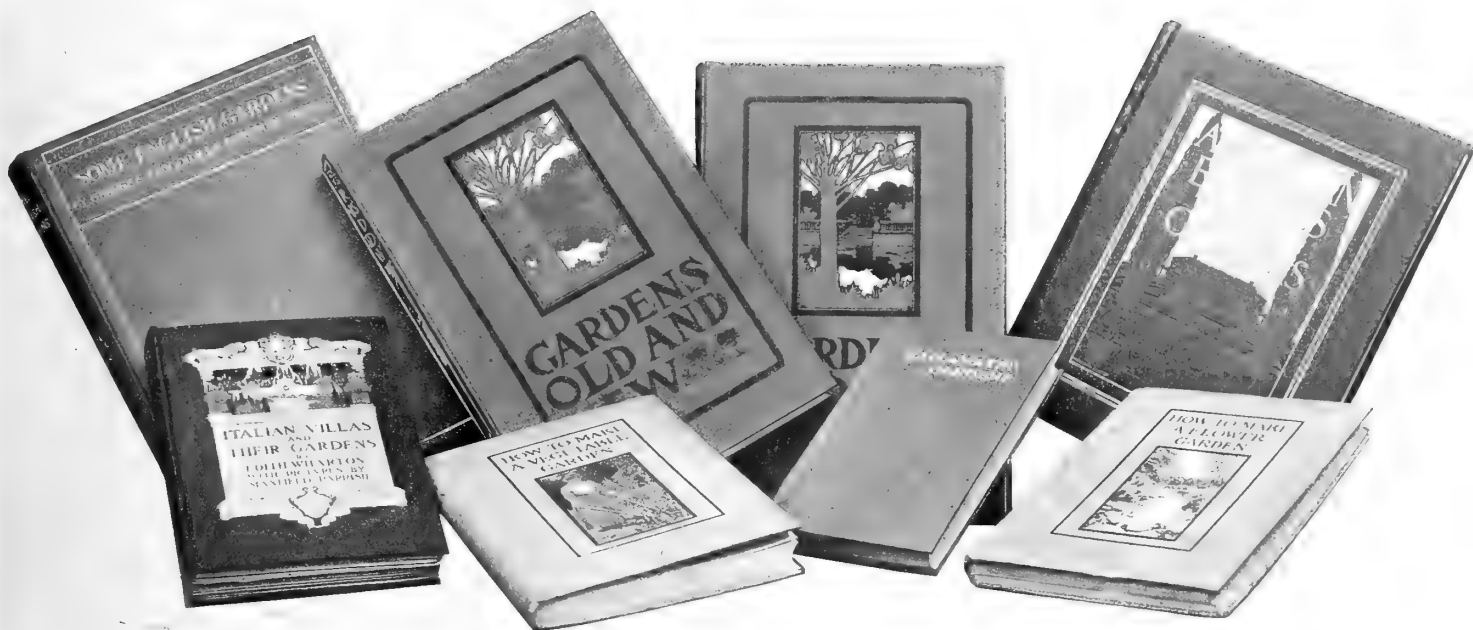
In flowering plants the greatest amount of the plant's work is done by the time the buds are fully developed, therefore stop feeding.

Fertilizers then would only hasten the end of the blooming season and shorten its duration by days, or even weeks. Once the plant is in flower give only the necessary water, but just as soon as the blooms drop feed again and assist the plant into healthy, vigorous growth. This will improve your next crop of flowers. In the case of palms and foliage this contingency does not arise. As soon as the pots are full of roots the plants will be benefited by feeding constantly.

A very clean, cheap and convenient fertilizer for house plants is ordinary "household" ammonia. Commence with five or six drops of ammonia to a cupful of water, and as the plants get used to it increase the dose, but never let it exceed half a teaspoonful to a breakfast cup of water. A teaspoonful of the special plant fertilizer sprinkled on the top of a 6-inch pot—more or less, according to the size of the pot—is sufficient. Then water it in. One application every two weeks should be sufficient. Wash the leaves every now and then, for dust will gather in the cleanest of rooms. If red spider or thrips attack the foliage plants sponge with water and a very little soap. For aphid on flowering plants sprinkle slightly with tobacco powder. Do this upon the first appearance of evil; one ounce of prevention is worth a pound of cure.



The only gorgeous yellow-flowered shrub that is in flower at Christmas is the genista (*Cytisus*). Its bloom does not last long, however, and it should be bought only for some special purpose. Of the two species commonly grown by florists, *C. Canariensis* has shorter racemes of flowers than *C. racemosus*



Some of the newer styles of garden books that are worthy specimens of the bookmaker's art. What a change from the old régime

Gardening Books for Christmas Presents—By Thomas McAdam

MOST HORTICULTURAL WORKS A DISGRACE TO THE BOOKMAKER'S ART—THE FEW THAT HAVE A DISTINCT CHRISTMAS OR GIFT QUALITY; ATTRACTIVE COVERS, PHOTOGRAPHIC ILLUSTRATIONS, AND SOMETHING TO SAY

TEN years ago there were mighty few gardening books that were fit for Christmas presents. So far as subject matter went, there were plenty of sober, useful books, but as to form, they were hopelessly un-beautiful.

Only nine years ago I took my brother (the practical member of the family, and cheerfully non-horticultural) to see a distinguished professor's library. Throwing open the door, I exclaimed with pride: "There's the largest collection of American books on horticulture in existence!"

"Humph!" he replied, after one sweeping glance, "Not much to brag about either, is it?"

I gasped. Of course, when I first came to study horticulture (at no early age), the farm and garden books struck me as a "hay-seed lot," but in the years that followed I had learned to love them for their real merit. Disillusionment is good for us, but it isn't always pleasant at the time.

The truth is that there was scarcely a book in the whole collection that a gentleman would care to have in his parlor. They had the look of the barn about them—faded covers, cheap paper, small type, scanty margins and gruesome old woodcuts; they abounded in realistic portraits of hairy caterpillars, apple scab, plum rot, and the like—all in heroic size—and no book was complete without a certain classical picture of the codlin moth's offspring eating the heart out of an apple of iron texture. It used to fascinate me, like the picture of Cortes burning Peruvians at the stake.

Bless that time-honored old apple-worm

picture! Originally "borrowed" from a Government report some thirty years ago, it still bobs up in new books on horticulture, for nine-tenths of them are just as "jay" as they ever were.

But the other tenth—ah, what a goodly change! Of course the half-tone pictures have made a world of difference, but I believe the "gardening novels" had a good deal to do with it. "Elizabeth and Her German Garden" set the fashion, and started a host of feeble imitators. It is still worth having although it doesn't ring quite true, and of course there is nothing about gardening in it. The "Garden of a Commuter's Wife" is infinitely better. It has a real message for Americans, and the gardening element is actually visible to the naked eye. (I wish some one would give it to me this Christmas. I've given away all the copies of it I can afford. I love that book.)

The point about such books as "Elizabeth" and "The Commuter's Wife" is that they help to create a race of gardeners. Also, they make possible such books as Mrs. Ely's "A Woman's Hardy Garden"—a type long familiar in England, but not here, viz., a book of personal experience by a skilled amateur which is practical, illustrated from photographs, and attractive enough for a Christmas present.

TWO MEN OF GENIUS

There were a lot of mighty good books on gardening in the eighteenth century, but I shall not mention them, because they belong to the pre-scientific era and because you have to pick them up in antique book stores. The

first American horticulturist of real genius was Andrew Jackson Downing, whose untimely death will always be a sorrow. He gave the first great impulse toward beautiful country homes in America, and his "Fruits and Fruit Trees of America," as revised by his brother Charles, is still the monumental work on varieties, though of course the cultural information is out of date.

After Downing came the Middle Ages. Every time I see the shoddy books of that period on my shelves I wince. Nine-tenths of the world's gardening books are merely parasites; they simply follow a popular interest already existent. But Downing really moved the whole nation. And another great creative force was old Peter Henderson—bless his heart! His "Gardening for Profit" undoubtedly molded thousands of lives. It induced hundreds of returning soldiers to go into market gardening after the Civil War. Many a success can be traced to the hope, hustle and rugged horse-sense in that grim old book. I thrill over it to-day. A quarter of a million copies of it have been sold—a record which is probably unparalleled.

I am surprised to learn, too, that Henderson's "Gardening for Pleasure" exercised a similar influence upon amateurs; that the book is as stable a seller to-day as English consols, and that, too, wholly independent of the efforts of the seed-firm founded by the author. This curious fact is eloquent of the conservatism of the backwoods element, for the book has all the crudities of the wood-cut era.

Nearly all of Peter Henderson's contemporaries who wrote on practical gardening

were as dull as death. It was the time of reaction against "book farming" and theories. The renaissance of American garden literature dates from the beginning of the "Rural Science Library" and the "Gardencraft Series," edited by our second great horticultural genius—Professor L. H. Bailey. He is the most inspiring teacher of our time, and no books are meatier than his. He was the first to blend the three elements, the readable, the theatrical and the practical. His books are scientific, and they have in them the underlying principles of the old-time "practical" books. The rule-of-thumb gardener never explained the reasons; he didn't know.

Professor Bailey's books are primarily for the student. Most of them are text-books. You cannot get any better books on their respective subjects than his "Principles of Fruit Growing," "Principles of Vegetable Gardening," "Pruning Book," "Nursery Book," "Forcing Book" and "Plant Breeding." But, of course, a text-book is not usually an exciting or appropriate Christmas present, and none of these books are attractively illustrated from photographs.

THE MOST SUMPTUOUS GARDEN BOOKS

The first great world-impulse toward sumptuous photographic illustration of garden subjects was given by the English *Country Life*. "Gardens Old and New" and other books costing from \$12 to \$25 are to some degree by-products of this splendid magazine. There are two volumes of "Gardens Old and New" for \$24, and two of "Gardens of Italy," both of them quartos, illustrated from photographs. They are rather oppressively and monotonously grand. No one reads such books, but they are magnificent picture galleries, and make appropriate gifts for wealthy persons, architects and landscape gardeners. The only notable American book of this character is "American Estates and Gardens."

CREATING AN AMERICAN TYPE

We have barely declared our horticultural independence of the Old World and are starting to create an American type of gardening literature. The American people want about five things in a book on gardening: (1) It must be attractively bound; (2) full of half-tone pictures; (3) readable, personal, juicy; (4) suited to our climate; (5) practical, specific, taking nothing for granted.

Such a book is "How to make a Vegetable Garden," by Mrs. Fullerton. It throws tradition to the winds by telling how to cook the vegetables as well as how to grow them, has an excellent planting table which tells the whole story at a glance, and is full of American wit and humor.

I have twenty-two books on vegetable gardening in my library, but I would give the whole shelf-ful for the three volumes I have dog-eared—the Fullerton book, Professor Bailey's and Vilmorin's. The last two are for the student. The first will make a gardener out of you against your will.

Professor Fletcher's articles in THE GARDEN MAGAZINE clearly prove that he is that *rara avis*, a horticulturist who can write. The

way he gets right at the important thing, and his rugged horse sense, are truly American. When his new book on amateur fruit growing comes out I mean to have it.

THE MOST IMPORTANT OF ALL

There is only one book I cannot live without. Bailey's "Cyclopedia of American Horticulture" is more useful to me than all the others in my library put together. It is a great advance over the best previous work of the kind—Nicholson's "Dictionary of Gardening"—not merely because it has cultural directions adapted to our climate (which no Old World book has), but it is far more accurate and critical. The "key" feature alone proves that. Moreover, the articles are not anonymous; they are signed by experts. Of course, every gentleman who can afford it wants both Bailey and Nicholson, and I shall want the new edition of the "Cyclopedia," because of its Synopsis of the Vegetable Kingdom.

The following are the best garden books I know that have a distinct Christmas or gift quality. All are in print now. I have ruled out text-books, books with unattractive illustrations and works on commercial practice, *e. g.*, market gardening. Most of these books I own; all of them I know.

ABBREVIATIONS

Instead of giving the names of the foreign publishers, I give the names of their American agents. All are in New York, unless otherwise specified.

B.—Bates & Guild Co., Boston.
C.—Century Publishing Co.,
D.—E. P. Dutton & Co.
D. L. M.—A. T. De La Mare Co.
D. P.—Doubleday, Page & Co.
H.—Houghton, Mifflin & Co.
H. B.—Harper & Brothers.
J.—Orange Judd Co.
K.—King, Hyde Park, Mass.
L.—Longmans, Green & Co.
L. H.—Librairie Horticole, 84-bis Rue de Grenelle, Paris.
M.—Macmillan Company.
Mu.—Munn & Co.
S.—Charles Scribner's Sons.
Wi.—J. Wiley & Sons.
Wo.—W. Wood & Co.

I.—FOREIGN PUBLICATIONS

It is important to know whether a gardening book is foreign or American, because foreign cultural directions do not apply. The following, however, are worth while for their pictures alone:

BOOKS COSTING \$10.00 TO \$25.00

The best with colored plates

Some English Gardens, Elgood (<i>L.</i>).....	Price \$12.00
Orchids, the Royal Family, Miner (<i>D. L. M.</i>).....	36.00

The best in black and white

Formal Gardens in England and Scotland, Triggs (<i>S.</i>)	25.00
Gardens Old and New (<i>S.</i>). Two series, each.....	12.00
Dictionary of Gardening, Nicholson (<i>K.</i>).....	30.00

BOOKS COSTING \$3.00 TO \$8.50

The best in color

Garden Colour, Waterfield (<i>D.</i>).....	6.00
Répertoire de Couleurs (Best color chart) (<i>L. H.</i>)..	7.50

The best in black and white

Century Book of Gardening, Cook (<i>S.</i>).....	7.50
English Flower Garden, Robinson (<i>S.</i>).....	6.00
Alpine Flowers, Robinson (<i>S.</i>).....	4.00
Wild Garden, Robinson (<i>S.</i>).....	4.20
Wild Garden (Limited edition) (<i>S.</i>).....	8.50
Bamboo Garden, Mitford (<i>M.</i>).....	3.00
A Garden in Venice, Eden (<i>S.</i>).....	7.50
Wall and Water Gardens, Jekyll (<i>S.</i>).....	3.75
Lilies for English Gardens, Jekyll (<i>S.</i>).....	3.75
Roses for English Gardens, Jekyll (<i>S.</i>).....	3.75

PERIODICALS

These may be ordered through Brentano or anyone who makes a specialty of subscriptions to foreign periodicals.

	Yearly
Flora and Sylva (Best colored plates).....	\$5.00
The Garden (Best half-tones).....	3.00
Gardeners' Chronicle (Best for news and botany)....	5.00
Revue Horticole (Best French).....	5.50
Gartenflora (Best German).....	5.00
Country Life Illustrated (Largest pictures).....	9.00

II.—AMERICAN PUBLICATIONS

BOOKS COSTING \$10.00 TO \$25.00

Sundials and Roses of Yesterday, Earle, large paper (<i>M.</i>).....	\$20.00
Old-Time Gardens, Earle, large paper (<i>M.</i>).....	20.00
American Estates and Gardens, Ferree (<i>Mu.</i>).....	10.00

BOOKS COSTING \$3.00 TO \$7.50

The best in color

Italian Villas and Their Gardens, Wharton (<i>C.</i>)....	6.00
Italian Gardens, Platt (<i>H. B.</i>).....	5.00

The best in black and white

Charles Eliot, Landscape Architect (<i>H.</i>) 1 Vol.....	3.50
Or 2 Vols.....	4.00
American Gardens, Lowell (<i>B.</i>).....	7.50
American Carnations, Ward (<i>D. L. M.</i>).....	3.50

BOOKS COSTING \$1.00 TO \$2.50

Gardening fiction

Garden of a Commuter's Wife (<i>M.</i>).....	1.50
Elizabeth and Her German Garden (<i>M.</i>).....	1.75

Historical and Literary

Sundials and Roses of Yesterday, Earle (<i>M.</i>).....	2.50
Old-Time Gardens, Earle (<i>M.</i>).....	2.50
An Island Garden, Thaxter (<i>H.</i>).....	1.25

Practical

A Woman's Hardy Garden, Ely (<i>M.</i>).....	1.75
How to Make a Vegetable Garden, Fullerton (<i>D. P.</i>)	2.00
Mary's Garden, Duncan (Best Juvenile) (<i>C.</i>).....	1.25
How to Make a Flower Garden (<i>D. P.</i>).....	1.60
A Plea for Hardy Plants, Elliott (<i>D. P.</i>).....	1.60
Roses and How to Grow Them (<i>D. P.</i>).....	1.00

BOOKS INDISPENSABLE TO THE STUDENT

The following are not primarily gift books. They are less attractive than the preceding, but they are standard works of reference every student wants to own:

Fruits and Fruit Trees of America, Downing (<i>Wi.</i>)..	5.00
American Fruit Culturist, Thomas (<i>Wo.</i>).....	2.50
The Fruit Garden, Barry (<i>J.</i>).....	1.50
Principles of Fruit Growing, Bailey (<i>M.</i>).....	1.00
Nut Culturist, Fuller (<i>J.</i>).....	1.50
Principles of Vegetable Gardening, Bailey (<i>M.</i>)....	1.25
The Vegetable Garden, Vilmorin (<i>D.</i>).....	5.00
Gardening for Pleasure, Henderson (<i>J.</i>).....	1.50
Horticulturists' Rule Book, Bailey (<i>M.</i>).....	.75
Garden Making, Bailey, (<i>M.</i>).....	1.00
Greenhouse Construction, Taft (<i>J.</i>).....	1.50
Greenhouse Management, Taft (<i>J.</i>).....	1.50
Plant Breeding, Bailey (<i>M.</i>).....	1.00

December in California Gardens

Sow hardy vegetables, *e. g.*, beets, cabbage, carrots, cauliflower, horseradish, onions, parsley, peas, rhubarb.

Sow lettuce, radishes and spinach every month in the year.

Plant the following bulbs: Tulips, hyacinths, anemones, Ranunculus, Sparaxis, and the four lilies that must be planted early, *viz.*, auratum, candidum, Harrisii and longiflorum.

Propagate carnations from cuttings.

Continue planting all hardy plants and trees, also roses of all kinds.

Keep rose-bushes well watered and fertilized, and experiment by disbudding for fewer but finer flowers. Rub out in the bud any inside growths rather than prune out next season.

Take up and store in dry, cool place dahlia and caladium roots and all bulbous plants that have finished blooming.



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is the cabinet you should get because every tool is guaranteed to be a perfect tool and to give complete satisfaction. It is possible for the makers of the Keen Kutter Cabinet to make this guarantee because every tool is a Keen Kutter, bears the Keen Kutter trade mark, and is made under the Keen Kutter motto—*"The Recollection of Quality Remains Long After the Price is Forgotten."* The mark and motto that for 36 years has identified a tool as standard and which covers a complete line of tools.

The Keen Kutter Cabinet is the only cabinet in which all the tools are strictly high grade, everyone being guaranteed by the same trade mark.

The Keen Kutter line of tools was awarded the Grand Prize at the World's Fair, St. Louis, Mo. No other line of tools can show a similar reward.

Keen Kutter Tool Cabinets and Keen Kutter Tools are for sale by all first-class dealers. It will pay you to write for a copy of our handsome book on Keen Kutter Tools. It's a book every user of tools will find useful as a permanent reference. We will mail you a copy free,

SIMMONS HARDWARE COMPANY
St. Louis, Mo. 298 Broadway, New York City



Galax All the Year Around

LAST year we adopted the suggestion of *Country Life in America*, and put a few galax leaves in every package along with the usual sprig of holly. Although a hundred million galax leaves are said to be sold by the florists every year, most of our friends had never seen them, and all were delighted with their dark, rich, glossy green and bronze, their wonderful waxy texture, heart-shaped outline and exquisite venation.

Most people allow galax to shrivel in a fortnight or so by treating it like holly or mistletoe, i. e., leaving it in a warm living room without water. But a teacher to whom we gave some galax astonished us later by returning some of the leaves in perfect condition the following April.

We asked for an explanation, and she declared that she had simply kept them in a vase of water.

Just for curiosity I kept them two months longer. The children who were too young for drawing lessons amused themselves by tracing on paper with a pencil the beautiful outlines of the galax leaves. Once a week, if I thought of it, I changed the water, and in June, when our friend went to California, we put some of these same leaves into a trifling box of edibles that was intended to beguile her journey. Six months after Christmas and still in perfect condition!

Although this simple story has never failed to astonish everyone who has heard it, there is really nothing very wonderful about it, and I dare say, if one took the trouble to clip the stems a little every fortnight and put a bit of charcoal and a drop of ammonia into the water at the same time, every leaf would maintain its beauty from one Christmas to another.

Another thing—galax lends a charming touch, when used with fruit for a table decoration, at the Christmas dinner.

After dinner put them in the refrigerator, and you can use them for New Year's and later. In fact the florists now keep galax leaves in cold storage for use every day in the year.

New Jersey.

W. M. E.

Don't Burn Your Autumn Leaves

YOU might as well take money out of your pocket and drop it in the river as to give away your autumn leaves.

Even if you burn them on the vegetable garden you will get only a fraction of their fertilizing value. Nothing is more quickly soluble. The heavy first rain may wash off a dollar's worth of plant food. If the ground is frozen the potash will not sink into the ground—it will be carried away on the surface, to your neighbor.

But even if you burn the leaves in the wisest fashion you throw away the most important thing of all—its value as humus. What most gardens need the worst—more than plant food—is leaf mold or other well-decomposed vegetable matter which does two things: (1) loosens the soil, so that the air can get in and make the roots grow apace; and (2) makes things comfortable for the nitrifying bacteria and uncomfortable for the denitrifying fellows.



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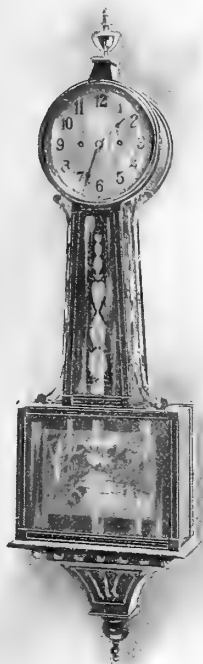
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At St. Louis, 1904, Mellin's Food was the **ONLY** Infants' Food to receive the highest award, which was **THE GRAND PRIZE.**

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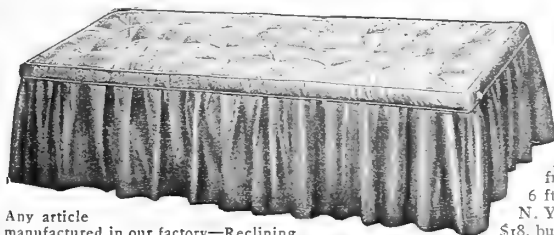
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Bulbs Started in December

DECEMBER is from one to three months late to plant bulbs for winter blooming, but some kinds will give satisfactory results even with so tardy a start. Several sorts have flowered for us, potted between the 12th and 18th of December. These were Roman hyacinths, in a dish of stones and



Crocus flowers unfolding. Each corm sends up several blossoms, unlike many bulbous plants

water and in a hyacinth glass; Chinese lily, also in a dish of pebbles and water; crocus and four kinds of narcissus, Von Sion, the showiest of double yellows; poeticus, the popular single white with colored cup; Stella, a straw-colored medium trumpet sort, and the polyanthus (Grand Monarque), which was started in water.

Bulb	Variety	Date Planted	Bloomed
Roman hyacinths	Mixed *	Dec. 18	Feb. 7
" "	Mixed †	Dec. 18	Feb. 16
Polyanthus narcissus	Grand Monarque ‡	Dec. 12	March { 3d week
Chinese sacred lily	Single white *	Dec. 16	Jan. 13
Crocus	Mixed §	Dec. 16	Feb. 16
Medium trumpet narcissus	Stella §	Dec. 16	Mar. 19
Double narcissus	Von Sion §	Dec. 16	Mar. 17
Poeticus narcissus	Ornatus §	Dec. 16	Feb. 21

* Planted in stones and water, † Hyacinth glass, ‡ Water, § Potted in earth

The Chinese lily was the first, blooming about the middle of January. The flowers lasted for a week. The first week of February came the Roman hyacinths in stones and water, followed nine days later by the same sort in a hyacinth glass. On February 16th the first crocus opened, and they continued to send up flowers for twelve days. The poeticus narcissus bloomed the third week in February. There was an interval of over three weeks before the later ones flowered. Von Sion, Stella and Grand Monarque bloomed about the middle of March.

The soil used for potting was a third each of sand, leaf mold and good garden soil.

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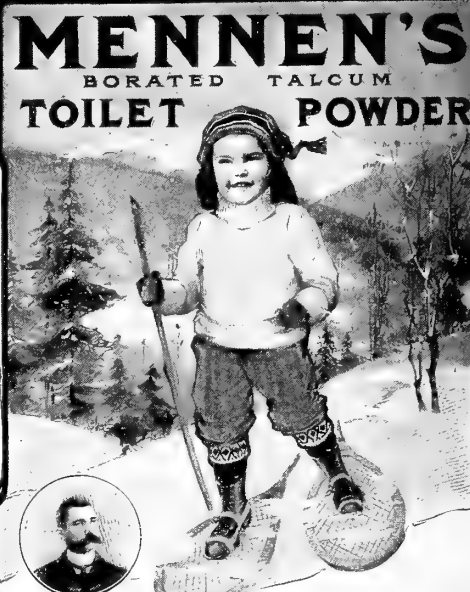
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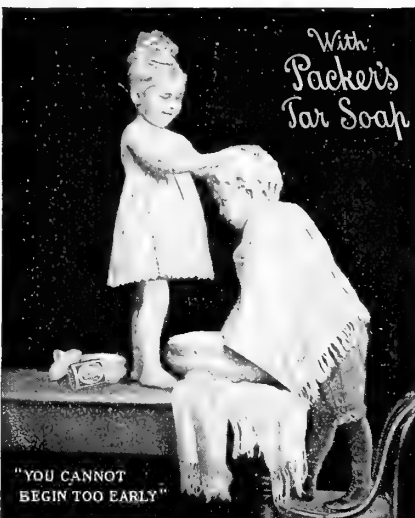


When the Snow Flies

and biting, frosty air roughens the skin, use Mennen's—it keeps the skin just right. A positive relief for **chapped hands, chafing and all skin troubles.** Mennen's face on every box—be sure that you get the genuine. For sale everywhere or by mail, **25c.** Sample free. Try Mennen's Violet Talcum.

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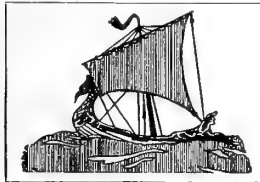
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on the tree; then Kodak pictures of the tree; pictures of the baby, of grandmother, of the Christmas house party—all help to keep green the Christmas memories.

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First flower of the poet's narcissus open. The blooming season lasted three weeks

A little manure and about a sixth of the bulk of earth was added. The potted bulbs received a good watering and were set in a dark place for about six weeks. When they made a good root growth they were brought to the light. Those in stones and water were treated according to their nature; the Chinese lily was not kept in the dark more than a few




A week's development of narcissus

days, as it makes an almost immediate start. The others were left until the growth of roots was vigorous enough to ensure an equally vigorous top growth. The potted bulbs required very little watering while making roots, especially the crocus, which molds easily if kept too wet.

I. M. A.

New York.

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For spraying and watering plants indoors and out, the **LENOX IMPROVED SPRAYER** is one of the most serviceable devices for house use. Unlike the old-fashioned rubber-bottle, which is clumsy and inefficient.

PLANTS when housed generally suffer from lack of moisture, such as rain or the morning dew give them; furnace or stove heat affect them badly. **THIS SPRAYER** substitutes a misty shower that supplies the plant most naturally and completely, as absolutely necessary to real success with house plants.

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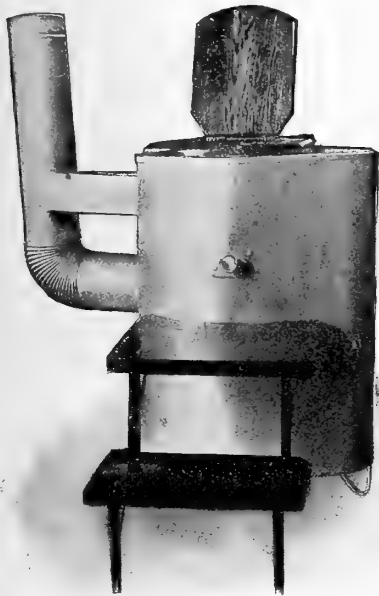
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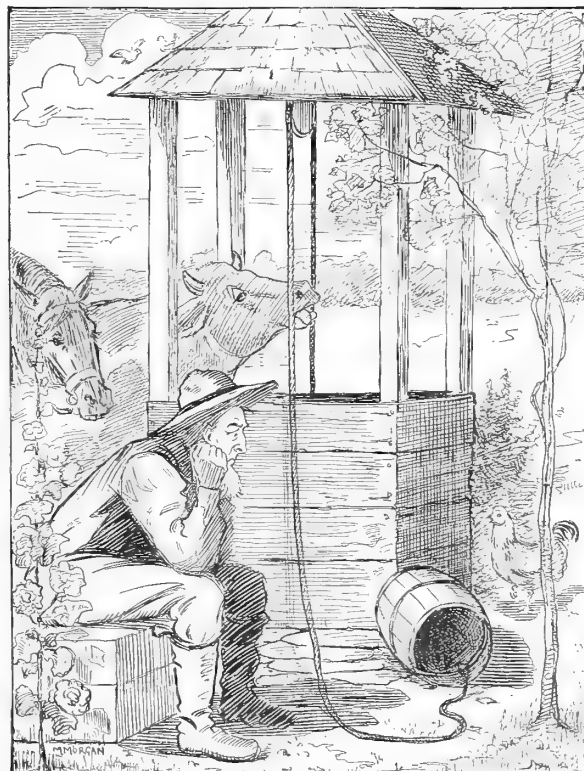
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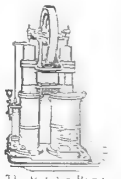
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This pump is also far and away the *cheapest* way of getting water, because it soon pays for its first and only cost (that of operation being practically nil) in the time and labor it saves.

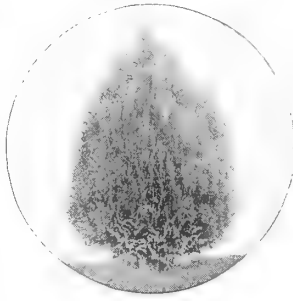
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LAST spring we found that six young peach trees which were to bear their first full crop had, as we supposed, been winter killed.

We were too busy at the time to cut down the trees, and in due season a few blossoms and some leaves appeared. The spark of



The result of the scale. In the spring, when healthy trees were in full leaf, ours were bare

life seemed so very feeble that we had decided to make away with them and plant others when One Who Knew happened along and said that, though the winter had been severe, the death of our trees could not be laid to the cold. He declared that the scaly, white appearance of the old limbs and the reddish brown spots on the new wood were nothing else than the dreaded San José scale, and his advice was to cut down the trees. As this coincided with our own ideas, the axe was raised, when One Who Didn't Know begged to be allowed to experiment.

All the formulas she had heard of were either evil smelling, expensive or required boiling; the latter operation with the large number of gallons usually recommended sounded too formidable, so she wrote to a noted entomologist asking for a formula that did not require that process.

By the time the reply came and the mixture was made the blossoms had changed to tiny peaches and the trees looked worse than ever. Nothing daunted, the One Who Didn't Know had every bit of affected wood cut out, which left nearly all of every tree on the ground, and armed with a pail of the mixture and a whitewash brush started in to apply it. "But," exclaimed the One Who Knew, "a brush is absolutely useless; you must spray the trees." Having no spray and having the brush, the One Who Didn't Know reasoned out that, as the object was to cover each part of the tree with the mixture, that end could be reached with a brush as well as with a spray.

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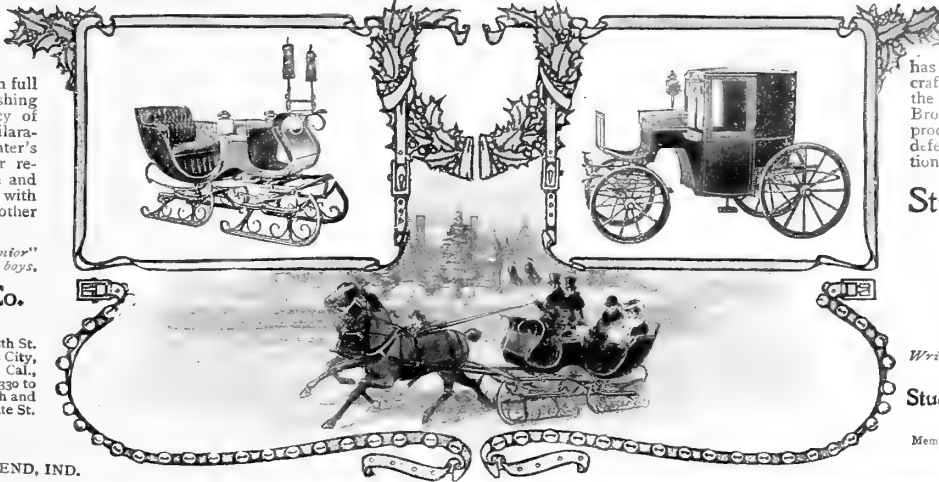
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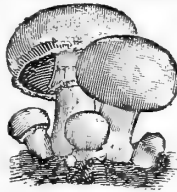
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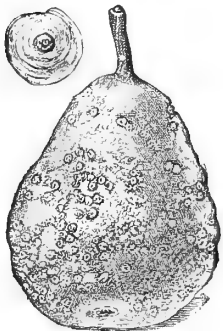
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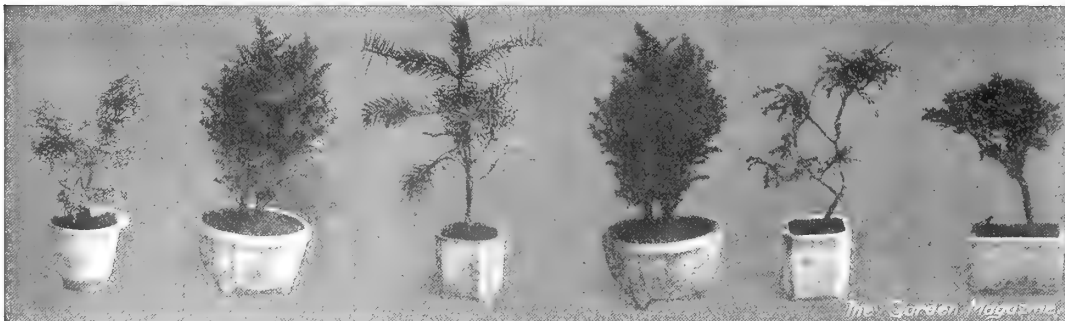
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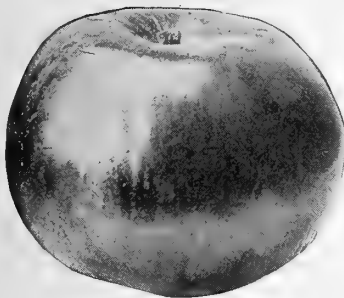
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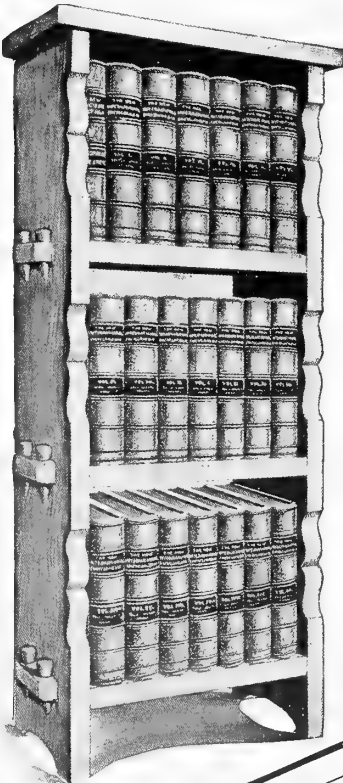
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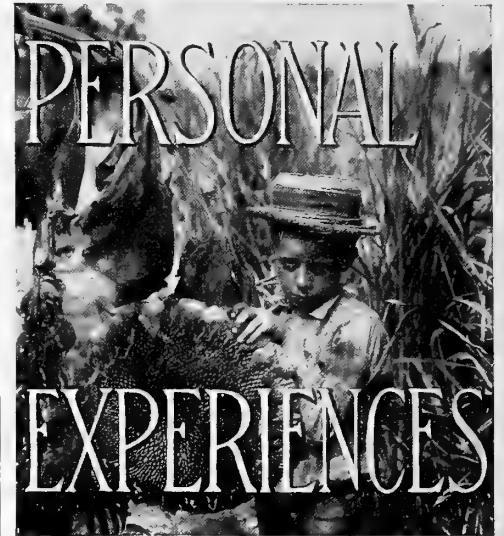
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X-MAS

1905



When to Plant Peonies

THE statement in the November GARDEN MAGAZINE that it is too late to plant peonies in that month appears to me too radical.

If the roots, after being dug, are stored in heaps or boxes in the nurseryman's shed, then by all means plant as soon as possible; but when they are properly kept, in slightly moistened sand or moss, or dug from the ground, as ordered, I maintain that late fall planting will insure as good results as were planting done considerably earlier.

As a matter of fact many peonies are dug too early. During the early part of September there is but little indication of ripening in many varieties. At that time the foliage is still mostly very fresh and green, as anyone may then observe. When the root approaches maturity the foliage begins to lose color and wither, and this condition is rarely reached in the majority of the *Chinensis* varieties until September 15th to 30th.

New Jersey. GEORGE H. PETERSON.

When special means are taken to overcome the natural conditions all sorts of things can be accomplished. THE GARDEN MAGAZINE, however, in advocating the earlier planting of peonies, is speaking for ordinary every-day conditions.—EDITOR.

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*Old-Fashioned Flowers and Other Out-of-door Studies. By Maurice Maeterlinck. Dodd, Mead & Co., New York, 1905. 106 pages; 4 3/8 x 7 1/2 inches; several colored plates. Price, \$1.20 net

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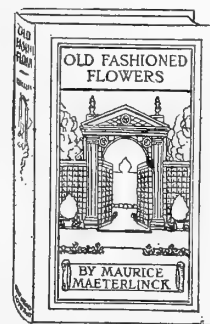
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Down in the city of Columbia, South Carolina, there is a concern that discovered why so many house plants failed to thrive in a room, and found that a jardiniere made from a particular kind of reed was the ideal holder for the flower pot. From this first effort has sprung up the manufacture of "Bombayreed" jardiniere. Palm lovers who had been equally unfortunate in preserving their house plants immediately secured specimens of the "Bombayreed" jardiniere, and the growing demand demonstrated the need for this new article.

The reed from which "Bombayreed" jardiniere are made is imported directly from the Malay Peninsula, and is noted for its pliability and strength, which admits of its being turned and bent to almost every conceivable form and shape. Classic designs have been somewhat followed and adapted, as these will readily harmonize with almost any decorative scheme. The style known as Grecian was suggested by a classic bowl; Roman, by the cap of a Roman column; Persian, Arabian, etc. The Carolina Glass Company—manufacturers of these jardiniere—have spent considerable time and money in experiments to secure the proper coloring materials, not only for the immediate effect but with a view towards permanency. Special shades have been sought for with a view to their harmony or contrast with the color schemes of rooms they will occupy. The sea-green and forest-green will fit in with almost any color scheme. The etruscan, red and maroon will fit in readily with a yellow, gold, green or neutral scheme. Gold has also been featured in "Bombayreed" jardiniere, as has light yellow and the natural reed color. A feature is being made of coloring jardiniere specially to order to match any color or shade in a room.

It need hardly be emphasized that "Bombayreed" jardiniere are an attractive addition to the decorative effect of a room—just as much as the house plants themselves. The makers of "Bombayreed" jardiniere have issued a little booklet on the "Care of Palms"—the only treatise on the subject in convenient and popular form. This little booklet contains more information of actual value in properly caring for and nurturing palms and other house plants than volumes of technical works on the subject. The Carolina Glass Company, Columbia, South Carolina, will send a copy to any reader requesting it before the present edition is exhausted.

(From "House Beautiful," Nov.)



Sixteen New Hardy Chrysanthemums from a First Attempt

ON Christmas Day, 1903, when the ground was covered with snow, I took a walk in my garden and spied a bunch of seeds on one of my pompon chrysanthemums. It gave me an idea. Why not raise some seedlings? I gathered the little soggy mass of pulp, dried it in the oven of the kitchen range, and in a few days took what was left to a local florist, as I had no greenhouse facilities. The florist rather sniffed at the idea of my getting any of the seeds to germinate—he thought the season had been too early to allow any to be fertilized, etc. A little persuasion, however, induced him to make a trial, and in a few weeks thirty-nine seeds had germinated.

These little plants were carefully looked after, and were put in thumb pots at the proper time. As early as possible in the spring they were planted in good soil in my chrysanthemum bed. Without any great amount of care they grew all summer, the tops were pinched back, and by fall they had made very large plants, twice as large as any of my other plants from cuttings.

The results were remarkable—about sixteen distinct varieties and only one single flowered variety in the lot—none was poor. I exhibited some of them at the New York Flower Show last year, and took second prize, but they were past their best several weeks before the show, which was very late.

For profusion of bloom in the fall the pompon chrysanthemum is a wonder. I cut armfuls of flowers daily from my bed, growing about 150 varieties beside the seedlings.

The amateur can produce with very little trouble just as fine flowers from his out-of-doors garden as the professional florist with all his glass, and they are especially welcome at a time when all other blooms and foliage have gone. They stand several degrees of frost without injury. Of recent years great strides have been made in improving this type, and it has been kept well in line with its giant relations in combination of colors and style of flower—some are double, others are asterlike, and some are as simple as a field daisy.

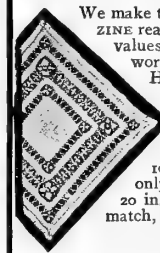
Good healthy young plants should be set out in the spring, as soon as all danger of frost is past; put them in good rich soil, two and a half feet apart; pinch them back until August, so they will make good stocky plants; do not neglect to give them water; keep the bugs off, and there you are!

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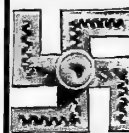


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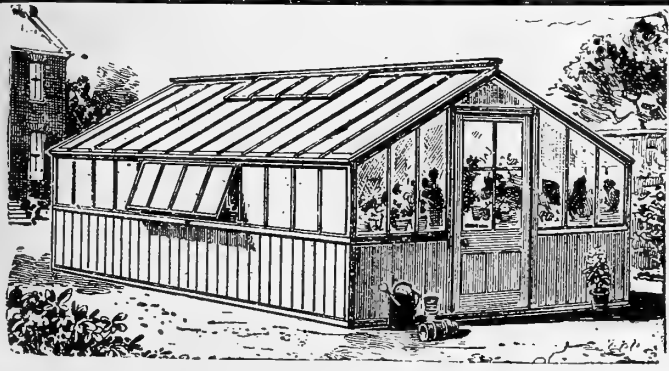
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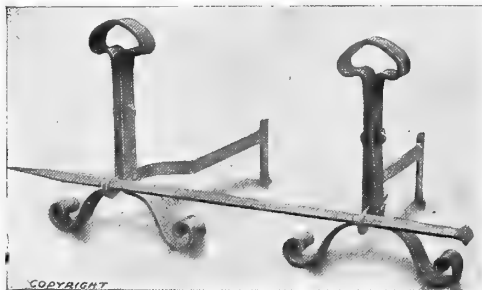
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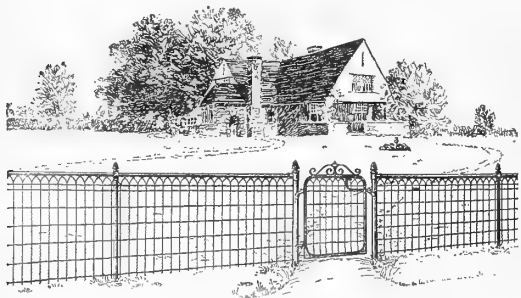
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The fourteen-year-old gardener at work

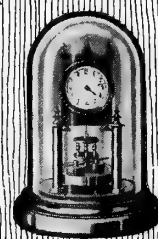
to be plowed under. On April 5th the garden was plowed, harrowed, and the potato rows marked out. I then planted my peas, beets, early potatoes, spinach, onion sets and onion seed. I worked in the garden every day after school and soon had it

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1ST CROP 2 ROWS BEANS		2ND CROP BEETS
2ND CROP 6 ROWS CELERY		
12 ROWS POTATOES		
2ND CROP 6 ROWS TURNIPS		
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SUMMER SQUASH		

Plan of the half-acre garden that was worked by a fourteen-year-old boy, and on which he raised crops to the value of \$71.52

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January
1906

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THE GARDEN MAGAZINE



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• IN AMERICA •

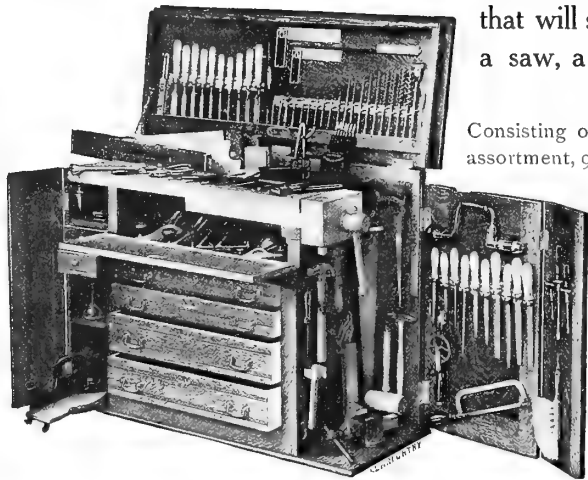


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that will save their cost many times over as well as providing instantly a tool—a hammer, a saw, a chisel for instance—when needed about the house, the barn or the garden.

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- No. 53, 36 Tools, \$15.00
- No. 54, 40 Tools, \$20.00

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With my Patent Dissolving Process, you can have Artificial Sunlight in your home. By this process I have made Acetylene a practical commodity, indispensable to all who know its merits. I long since made a profession of the study of Acetylene, and its practical uses, and have solved the problem of HEATING and COOKING with Acetylene.

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DREER'S GARDEN BOOK FOR 1906 is by far the most complete book of its kind—the most comprehensive list of Seeds, Plants, Bulbs, etc., ever published. It contains six full-page color illustrations true to nature; three of these are devoted to the Old-Fashioned Garden Flowers now so popular.

Other illustrations in half-tone picture the choicest varieties of Flowers and Vegetables. It is specially worth while to send for this book, if only for the select variety of Roses offered. Everyone with an interest in Gardens and Gardening should have Dreer's Book.

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THE GARDEN MAGAZINE IN 1906



CAN you afford to live another year without THE GARDEN MAGAZINE? With it are you not bound to have a better garden in spite of yourself? It may save you on vegetables alone ten times the price of a year's subscription.

During 1906 it will be even better than it has been in the past. It is to be enlarged and improved. The illustrations will be more profuse and interesting than they have been, for we have added another well-known nature photographer, which gives us unequalled facilities for picture getting.

SOME OF THE FEATURES OF 1906

QUALITY VEGETABLES FOR THE HOME TABLE

A series of twelve articles written by two connoisseurs—the man who grows the vegetables and the wife who cooks them.

Any beginner can have better vegetables than the grocer, because home-grown vegetables are fresher; but there is only one way in which you can know the varieties that stand for quality, viz., by reading these articles written by people who have tasted leathery lettuce, stringy beans, hollow-hearted celery, insipid peas, corn that fills your teeth with hulls, and other pious frauds among the much advertised "novelties."

These writers tell the best-flavored kinds, and how to prepare them in such appetizing forms that your guests will sing the praises of your garden and of your cooking.

QUALITY FRUITS FOR THE HOME GARDEN

Will be another strong series of twelve articles. Professor S. W. Fletcher will continue to write those lively, sensible and informing articles that have excited so much favorable comment. Heretofore, fruit books and articles have been written for the commercial grower, and contained tons of dry matter of no use to the amateur, who wants a few fruit trees and some berries for home

use and doesn't care particularly for "Dead Sea Fruit"—fair apples, like Ben Davis, with ashes inside, or Kieffer pears, with hearts of wood and stone.

THE MAKING OF A LAWN

The most elaborate series of articles, with the most surprisingly beautiful and practical pictures, ever published on this subject.

INSPIRING ARTICLES ABOUT FLOWERS

We are pleased to announce two new series as follows—

WATER-LILIES AND WATER GARDENS

A comprehensive series by an expert on the botany and culture of water-lilies, who has the gift (rare among experts) of writing so that people can understand and appreciate.

WINDOW GARDENING AND HOUSE PLANTS

A series of articles that will throw into the shade anything of the kind yet written. Illustrated with all sorts of ingenious little home-made, labor-saving devices, and series of pictures showing just how to pot a plant, make a cutting, kill the destroying insects, etc.

The twenty-five special departments of the magazine, which have been of such interest in the past, will be continued during the coming year. The enlargement of the magazine will enable the appearing of more of these each month than heretofore. A partial list of these departments is as follows:

- | | |
|-------------------------|------------------------|
| The Gardener's Reminder | Vines and Trailers |
| The Vegetable Garden | The Water Garden |
| The Lawn | Coldframes and Hotbeds |
| Trees and Shrubs | The Window Garden |
| The Small Greenhouse | The Backyard Garden |
| Roses | The Hardy Border |
| Spraying | California Department |
| Garden Insects | Southern Department |
| The Bulb Department | Annual Flowers |
| The Fruit Garden | Fertilizers |



The two great Spring and Fall Planting Numbers, two of the *most important garden publications* of 1906, are sold on the newsstands for 25 cents each. These and probably a third double 25-cent number are included in a year's subscription without extra charge. Thus, for one dollar regular subscribers secure twelve copies that would cost \$1.50 (or \$1.65) if they were purchased separately.

..... CUT OFF AND MAIL THIS COUPON

DOUBLEDAY, PAGE & COMPANY, 133 EAST 16TH STREET, NEW YORK.
Enclosed find \$1.00 for a year's subscription to THE GARDEN MAGAZINE. Commence with the February issue (which is Number one of Volume 3.)

.....
.....

THE GARDEN MAGAZINE  COUNTRY LIFE IN AMERICA  THE WORLD'S WORK
DOUBLEDAY PAGE & CO NEW YORK

THE present is the very nick of time for a magazine of the highest class devoted to Farming. This year (1905) broke all records—the American farmer earned six and one-half billion dollars; and “every sunset,” as the Secretary of Agriculture reported, “registered an increased value of over \$3,000,000 in American farms.” The American farmer stands alone in the world as a producer. He is, in fact, a new kind of man, and farming has become a new kind of science. We announce for this new farmer a new illustrated magazine of a new kind, to be called

American Farming

*An Illustrated Home Magazine
Devoted to the Living and
Growing Things on the Farm*

It will be beautiful. We shall use to the fullest extent the modern resources of photography, fine paper, and beautiful half-tones which have made our other three magazines notable. The best, we are convinced, is not “too good for the farmer.”

It will be a live, practical magazine covering every interest of the intelligent and progressive American farmers—and we are sure there are enough of these on the six million farms of this country to support such a periodical at \$1.00 a year.

AMERICAN FARMING will lay special emphasis on the farm home. It will not only help to show how to make a living, but how to get the most satisfaction and happiness from farm life.

It will be especially strong on the side of animals: horses, cows, oxen, sheep, swine, poultry, and so on, the live things on the farm, which are after all the most interesting.

It will emphasize the personal side: a whole series of articles, for instance, will describe men in every section who have succeeded, and will show just how they did it.

Farming as practised on the great farms of the West and Northwest will be adequately treated for the first time. Special attention will be paid to the crops and products of different sections.

While thoroughly up-to-date in theory, and using to the full the knowledge gained by the scientists, it will be eminently practical.

All sorts of successful co-operative enterprises will be covered elaborately—schools, roads, irrigation, systems of storing and marketing, telephones, etc.

In a word, with the broadest field and the most inspiring subject there is in America, AMERICAN FARMING will combine beauty and practical helpfulness as does its most successful predecessor, THE GARDEN MAGAZINE.

DEPARTMENTS CONDUCTED BY EXPERTS.

The Month's Work
The Farm Home
Farm Buildings
Implements
Farm Animals
Poultry

Dairying
Stock Raising
Insect Pests
Farm Law
Bees
Cereals

Com
Hay
Cotton
Tobacco
Fruits
Vegetables

Wood Lot and Forest
Markets and Hauling
The Household
Co-operative Schemes
Uncle Sam's Helping Hand

HOW TO BUY A FARM
Legal points and advice.

IMPORTANT CONSIDERATIONS IN SELECTING A FARM. Distance from markets, roads, soil, etc.

ESTIMATING EXPENSE AND INCOME
Expert suggestions for telling in advance if a farm will pay. Things the average farmer omits from his balance sheet.

CLEARING NEW LAND
How to do so most effectively, and the cost.

A FAILURE AND A SUCCESS IN VIRGINIA
An actual record of experience on \$8-an-acre land.

HOW A THEORIST TURNED PRACTICAL FARMER. A professor's experience.

THE A B C OF FARMING
Short articles, summing up the cardinal points.

HOW SOME FARMERS ABUSE THE SOIL
SOME COMMON FARMING ERRORS
WASTED OPPORTUNITIES FOR PROFIT
PUBLIC LANDS STILL OPEN AND HOW TO GET THEM

IS AGRICULTURAL EDUCATION PRACTICAL? Articles for and against the systems of State College, etc.

THE FARMER AS A BUSINESS MAN
A business problem—keeping accounts—a sinking fund to pay off mortgages.

SOLVING THE LABOR PROBLEM
What is done in various sections to get labor at the time it is needed—the most acute problem the farmer faces.

EXPERIENCES AS A FARMHAND

THE MANAGEMENT OF A FARM
A 10-acre truck garden. 100 acres in New England. A 10,000-acre wheat ranch, etc.

HOW TO BUY HORSES FOR THE FARM
SUCCESSFUL FARMERS
A series telling just how each man has worked out the special problems of success in his particular locality.

IRRIGATION, WEST AND EAST
What it will do—how to get it.

TELEPHONES FOR THE FARMER
AUTOMOBILE LINES FOR HAULING FARM PRODUCE

A PLEA FOR THE OLD-TIME HOME INDUSTRIES THAT MAKE THE FARMER INDEPENDENT

THE DIFFERENT BREEDS OF HORSES, COWS AND SWINE

SPECIAL NOTICE

TO THE GARDEN MAGAZINE READERS:—If you will send us two new subscriptions to “The Garden Magazine” we will put your name on the list for “American Farming” one year free.

AMERICAN FARMING will be the fourth magazine Doubleday, Page & Company have started. Invariably the first numbers have gone “out of print,” and the early issues have sold at a high premium. Begin with Number One and send your \$1.00 NOW. Use the accompanying subscription blank.

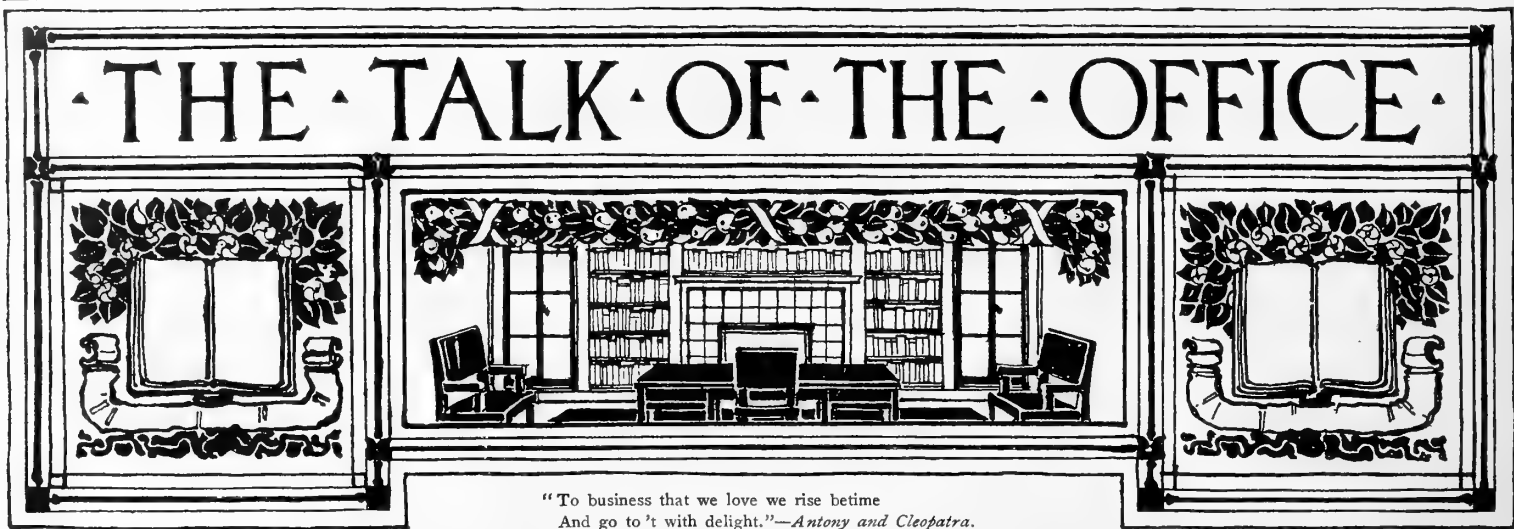
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133-137 East 16th Street, New York City.

Enclosed find \$1.00, for which send AMERICAN FARMING for one year to

Name _____

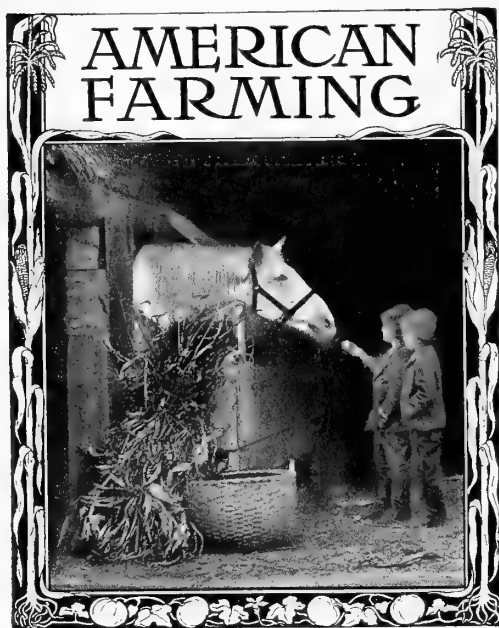
Address _____



"To business that we love we rise betime
And go to't with delight."—*Antony and Cleopatra.*

OUR NEW MAGAZINE
AMERICAN FARMING

If there ever was a fortunate time for starting a new magazine for farmers, this is the moment; for those who till the earth have had a year of prosperity and plenty without precedent. As the Department of Agriculture has pointed out, our farmers in 1905



Our New Magazine

earned about \$6,500,000,000, and "every sunset registered an increased value of more than \$3,000,000 in American farms," a record that stands unique in all the world. We shall make a magazine of the highest class for farm people of every kind. We have no

intention of following the well-worn track of present agricultural periodicals, which are both excellent and extremely numerous. We shall not undertake to fill their field; but there is a great opportunity for a magazine that shall be illustrated and printed as beautifully as *Country Life in America* and THE GARDEN MAGAZINE. The highest authorities will write for it, but they will write practical, common-sense articles that appeal to the intelligent farmer. We hope to begin this magazine next month. If you are a farmer, or are interested in farming, clip coupon at the bottom of this page and send us \$1. We will return it if the magazine is not as good as you hoped and expected it to be.

ROUNDING OUT THE FIRST YEAR

With this number the first year of THE GARDEN MAGAZINE ends. If it has not been as good a magazine as it will be during the second year, it has, at all events, made a place for itself which has been recognised by a great many thousand readers; and it has been a financial success from the very first issue. It is a magazine of a distinct class, and we shall keep it at the head of its class by putting into it the "sinews of war" which are supplied by its readers and by its advertisers.

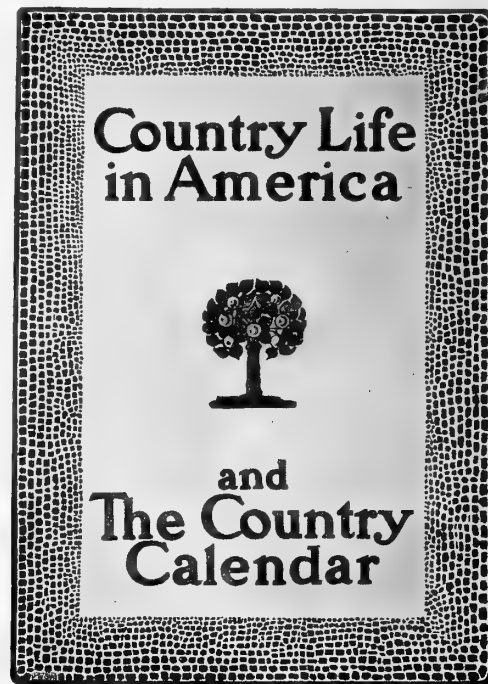
BOUND VOLUMES

We are yet able to supply complete bound volumes of the first six months, and the bound form of Volume II., with index, title pages, etc., is about ready. If our readers desire to have their volumes bound in their own towns, we will furnish indexes and title pages free of cost; or we will bind their numbers for 75 cents if the numbers are sent to us in good condition express paid.

"COUNTRY LIFE IN AMERICA" AND "THE COUNTRY CALENDAR"

The January number of *Country Life in America* is the first issue of a new era because it is the first number issued since the consolidation with *The Country Calendar*. The pages of text have been increased, a new feature, the inside of the country house, has been added to its contents, and a number of improvements of other kinds are now carried into effect since the magazine is permanently

enlarged. The January number will be sold on the news-stands for 35 cents, and the subscription price is raised to \$4 a year; but any reader of THE GARDEN MAGAZINE who will send us \$3 for a year's subscription to *Country Life in America* may have it at that price if the money reaches us before January 31st.



January Cover

POSTPONED BOOKS

We regret extremely that "*The Country House*," by Chas. Edw. Hooper, which we expected to publish in December, has been postponed until January, but the book will be a better book. The same is true of the little book "*How to Grow Ferns*."

THE PRINTERS' STRIKE

On the first of January there will be a strike of the printers. Doubleday, Page & Company have chosen to run their composing room as an "open shop." This may result in some delay in getting out the February numbers of our magazines, but we trust that our readers will bear with us until normal conditions come again.

DOUBLEDAY, PAGE & CO. G.M.-1-06
133-135-137 East 16th St., New York
Enclosed find \$1.00 for which send me
AMERICAN FARMING beginning Number 1.

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The Garden Magazine

JANUARY, 1906

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WILHELM MILLER, Editor

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Homespun Philosophy

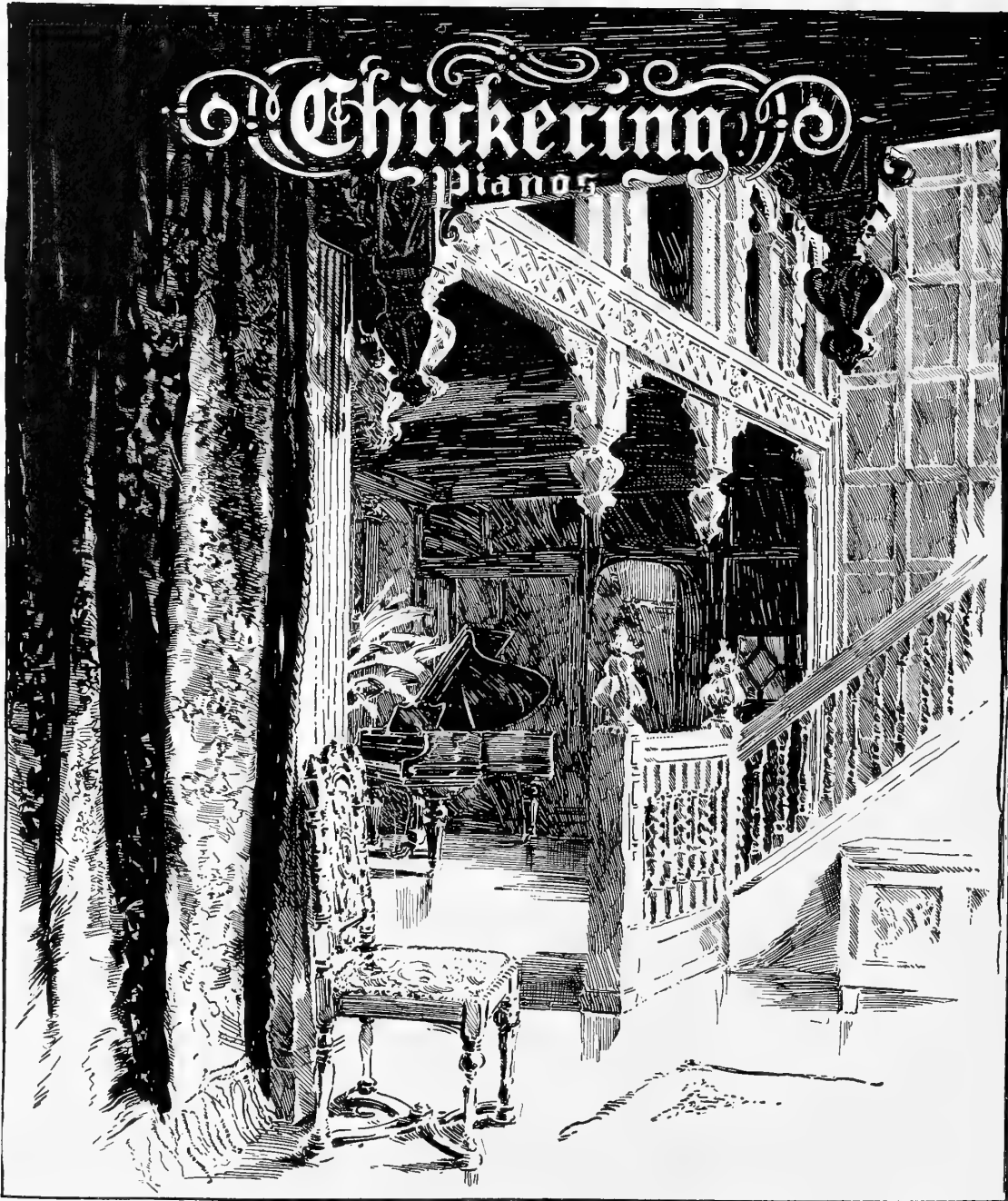
TO laugh as you haven't
laughed in a long
time, get OPIE READ'S Old
Lim Jucklin. (\$1.50)

THE GARDEN MAGAZINE COUNTRY LIFE IN AMERICA THE WORLD'S WORK
DOUBLEDAY PAGE & CO NEW YORK

A Word to the Wise

FOR literary power such as
Kipling showed in short
stories, cf. G. B. LANCASTER'S
Sons o' Men. (\$1.50)

THE GARDEN MAGAZINE COUNTRY LIFE IN AMERICA THE WORLD'S WORK
DOUBLEDAY PAGE & CO NEW YORK



IN all departments of the arts and sciences the oldest devotees are the most perfect in their profession. ¶ The subtle knowledge that comes of a life-long experience is intensified in the making of Chickering Pianos. ¶ The founder of this house began in 1823, more than eighty-one years ago, to make the pianos that bear his name. ¶ Always famous for the excellence of their tone, they are to-day the unquestioned superiors of all others. ¶ Catalogue upon request.

We would especially call attention to the "Quarter ($\frac{3}{4}$) Grand" the smallest Grand embodying modern principles ever made.

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Established 1823

The Garden Magazine

VOL. II.—No. 6
PUBLISHED MONTHLY

JANUARY, 1906

ONE DOLLAR A YEAR
TEN CENTS A COPY



[NOTE.—For Table of Contents of this month's number see page 259.]

How to Have a Better Garden

YOU can have a better garden than ever before by following this page every month. It mentions only the important things. No items will be repeated.

Hundreds of beginners followed these directions last year and have had success.

No matter how good a garden you had last year, you can have a better one this year. There is only one sure way:

Plan it in January as thoroughly as you would plan a house.

THE "FUN" OF PLANNING

Don't say it's "work" to plan. It isn't if you approach it in the right spirit. Resolve to have a merry time of it, come what may.

Wholly aside from the practical benefits of planning, you are entitled to the pleasures of anticipation. They are half the fun in gardening, and the way to get the keenest pleasure is to exercise foresight.

The articles in this number only tell the *fruits* of foresight, but read between the lines and you will see the *joys* of planning.

The pleasures of a shiftless garden are great, but the joys of a well-planned garden are greater.

IF YOU DON'T PLAN

You will have too much of a few important things and not enough of others.

You will have nothing new to pique your appetite and delight your guests.

You will spend more time, money and effort and get less results.

THE HOME GARDEN NEVER PAYS

That is, not in dollars and cents, if you count your time worth as much as the market gardener's.

It is on too small a scale. A man ought to be ashamed of himself if he cannot sell his time for better pay than that.

The whole point of a kitchen garden is this: *You get better things than money can buy—fresher vegetables, better kinds.*

As to freshness, the home gardener can beat the grocer every time. Any beginner can do it.

But the better kinds—the varieties that stand for quality, not for ability to ship round the world and last forever—that's where study and planning come in.

And that's what THE GARDEN MAGAZINE is for—quality, not the market-gardener's interests.

Devote five evenings to planning, and the vegetable garden may pay you a dollar an hour for the time so spent.

HOW TO PLAN

Send postal cards to all the seedsmen whose advertisements attract you. Get their catalogues.

Measure accurately the length and breadth of your kitchen garden.

Draw a diagram of it to scale.

Then decide which way to run the rows. The article in February, 1905, page 12, will help you.

Decide how much space you can give to the things that require lots of room—corn, potatoes, cabbages, and vines of the cucumber family.

Then make a line for every single row of vegetables and name each crop. For quanti-

ties and distances see April, page 132, and the planting tables on page 110.

Then plan your succession crops and put the name of each on the plan, in parenthesis, after the crop it is to follow. The article on "Three Crops from the Same Ground," July, page 284, will show you.

A COURSE OF READING

There are three important subjects we all need to study every year—fertilizers, spraying, and varieties that stand for quality.

If you have the bound volume of THE GARDEN MAGAZINE you might spend three evenings as follows:

1. Consult "fertilizers" in the index, read those articles, and decide what you will do.
2. On insects, diseases and spraying read Volume I, pages 22, 32 and 68.
3. On "quality" varieties read Volume I, page 183.

IF YOU WANT THE BEST

You should have a hotbed and a coldframe, so that you can have fresh vegetables in April and May. Therefore read pages 30 and 58.

Also you should have the best tools. Therefore read "Gardening Without Backache," page 28.

For the best small fruits for the home garden see page 106.



Planning the garden



The first year's garden was a geometrical horror, with obtrusive clothes posts and an ugly board fence that ruined plants near it by shading them



The outlook to-day: Flowers in abundance, the clothes posts things of beauty, the open fence letting in air and light

The Confessions of a Garden Sinner—By H. G. Taylor New Jersey

SOME ATROCITIES I PERPETRATED IN MY SUBURBAN BACK YARD SEVEN YEARS AGO—HOW GEOMETRICAL HORRORS HAVE GIVEN WAY TO LAWN, SHORT-LIVED ANNUALS TO HARDY FLOWERS, AND CLOTHES POSTS TO PILLARED VINES—HOW I "OWN" THE LANDSCAPE INSTEAD OF LIVING IN A BOX

Photographs by the author

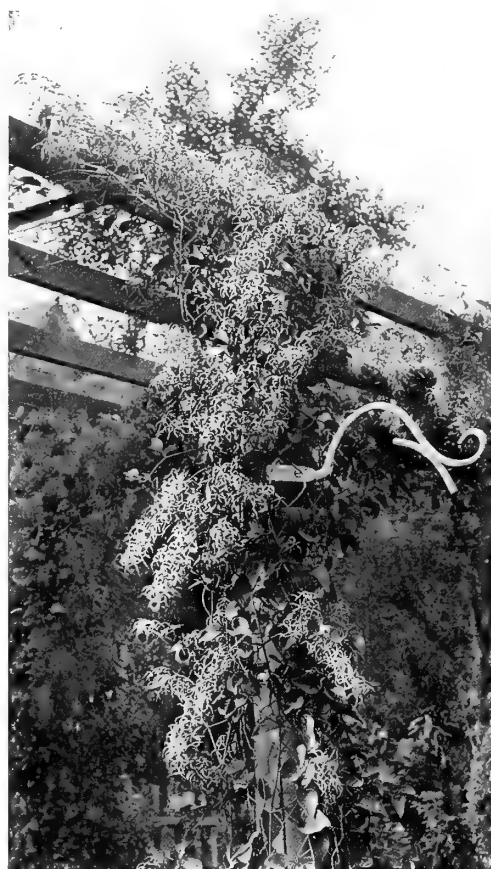
OUR back yard is just an ordinary suburban yard, about 50 x 75 feet, and this is all that can be said of it. Seven years ago it was graded and our first plan for its improvement made. Several flower beds were laid out in a weak formal design and edged with sod. They were surrounded by walks covered with macadam top-dressing, giving a clean, dry surface. In front of the rear fence was a trellis for sweet peas. It all looked very pretty, but it was only the beginning of a garden. After the first year this board fence was condemned, the boards knocked down, and wire stretched across the old frame. Vines trained over this gave a beautiful bit of greenery and better still allowed the air to come inside the garden. Other changes were gradually made, and the present-day practical garden is a direct growth from the original terror.

At first we had mignonette, lettuce, asters, Swiss chard, etc., all together. The seeds were sown in rows and the soil loosely raked over, with the result that many were hopelessly buried, and most of those that remained near the surface were dried up as soon as they sprouted, for we had ignorantly let the seed bed dry out. The vegetables were about the only things that came up, the flower space being for the most part occupied by labels only. But there was one glorious exception—the sweet peas made a great growth and, although they did not bloom because of having too much shade, we felt encouraged. The next few seasons were also devoted to learning by experience, the idea being to grow all that was possible from the seed as we wanted the garden to be our own. Success was reached by using boxes filled with light, sifted earth, the seeds being covered to about four times their diameter and the surface pressed firm with a block of wood.

These boxes were placed where the sun did not shine upon them until late afternoon, and the earth was never allowed to dry out.

A LESSON IN SWEET-PEA CULTURE

This important lesson was early learned—that water on the surface does not necessarily



The evolution of a clothes post. Now a part of the pergola and draped with Japanese clematis (in fruit)

mean water at the roots. In spite of daily waterings the sweet peas seemed to be drying up, and upon digging it was found that the water did not penetrate more than two inches, and was rotting the stalk while the roots were not supplied. A remedy was found in banking the earth so as to make a trough, into which were emptied several pailfuls of water about twice a week during the dry weather. By shearing off the vines about level with the top of the trellis, side shoots were thrown out and the blooming season much prolonged.

ASTERS GROWN WITH WOOD ASHES

After losing one year's flowers we grew the late varieties, to beat the aster beetle. These flower when the insect has about run its course. Then, of course the mysterious disease fell on our garden—the plants turned yellow and died—until from somewhere came a hint about wood ashes applied around the collar. It worked like a charm, and if it is done every two or three weeks during the season there will be no trouble.

THE CLOTHES POSTS BECOME THINGS OF BEAUTY

Long ago, when we only dreamed of a garden, we had set our hearts upon certain ideals. Our garden was to have an arch, a column and a pergola, and we were able to construct something to call by each of these names, using mostly such material as was at hand. The clothes posts being with us to stay, we tried to utilize them to advantage.

We had done with rigid formality, and to introduce a break the two posts nearer the house were moved further apart and out of line while the other two were brought nearer to each other. Each was encased in extra heavy chicken wire, and provided at the top with a hook and cleat fastened by bolts going



A dozen old plants of standard hydrangeas (*H. paniculata*, var. *grandiflora*) from an old-time garden make a hedge on one side and form the background to the border of perennials

through the post. At the base of the first post are three everblooming honeysuckles (*Lonicera Heckrotti*). The first year the buds of this vine were a mass of little green bugs which neither liquid nor powder would kill. The following March the vine was sprayed with kerosene soap, which seemed to be a successful treatment, as there have been no insects since that first attack.

The second post was placed five feet from a flower bed and an additional support set in the bed; both were then connected by an arch made of iron such as would be used for wagon tires. The ends were fastened to the posts by bolts, and crosspieces of light iron riveted about eighteen inches apart, to support chicken wire one foot wide.

The remaining posts were made to form a small pergola, and connected by irons as before to posts in a parallel bed. In this case the iron strips are supplemented by a bar of angle-iron along the top, to prevent sagging under the weight of the wooden crosspieces. Japanese clematis (*Clematis paniculata*) grows around all these posts, and I have found it best to plant at least two roots at the base of each, in February trimming one vine back to the top of the post and cutting off the other at the ground level. In this way the taller plant starts, soon covers the top, and the lower plant clothes the post where the stalks of the other are comparatively bare.

GRADUATED FROM ANNUALS TO PERENNIALS

The transition from beds of temporary annuals to borders of permanent perennials was a great step of progress. Yet it arrived slowly. Now, however, the border of hardy perennials is practically continuous on three sides of the back yard. The plan for this is carefully studied and worked out on paper. The whole space is plotted into beds of about twenty feet in length, and each space considered separately with reference to the color scheme and succession. The general effect of the whole border is that it is always in flower. Plants that become unsightly after flowering are arranged so that others of later bloom will hide them, as, for instance, a clump of phlox in front of Oriental poppies. It is always replanning and replanting here, for

each season reveals possibilities of improvement. Tree peonies did far better when moved from the border to a bed along the south side of the house; Japanese anemone Queen Charlotte did not prove satisfactory until planted in a bed well raised and under an apple tree, where it was protected from early frost; Shasta daisies did not thrive until moved for the third time, but last season gave a tremendous bloom in the full sun, being aided by liquid manure.

German and Japanese irises were placed in the same bed in partial shade. The former did well, but the Japanese was a disappointment. Therefore a sunken bed was made in a more open situation, spading in old manure to a depth of about two feet, and the plants have responded accordingly. This bed is two inches lower than the lawn, and the surrounding sod is raised about four inches. We use the hose liberally here from April through the blooming period, and give applications of manure water about once a week.

Delphiniums it was found needed plenty of sun and a well-raised bed. Only one plant was lost by crown rot, for during the wet spells in summer, when the plants begin to "damp

off," we have been able to stop the disease by soaking well with lime water and sprinkling a little lime on the ground.

A dozen standard hydrangeas (*H. paniculata*, var. *grandiflora*), planted five feet apart along the north fence, has formed an excellent background for the north border. We were fortunate in being able to secure them in large plants from the breaking up of a famous old garden elsewhere—a dozen of uniform size and form—and they give a finished appearance to the seven-year-old yard that makes it the wonder and envy of gardening visitors.

NEW USES FOR SAND

For bulbs in the mixed border white sand has a very particular service, quite distinct from its use to the young roots. It never cakes, and when digging its color warns one if too near a bulb. Its cost is infinitesimal, as a sack can be had from the grocer for almost nothing, and that quantity goes a long way. We not only set all our lily and other bulbs in this white sand, but in the fall a little of the earth is removed from the crowns of such plants as larkspur, foxglove, columbine and hollyhocks and replaced with the sand. In the spring the crowns are fresh and clean, and the sand prevents trouble from baked or saggy soil during the following summer.

In the spring the manure which has been between the plants in winter is spread over the surface as a mulch, being sprinkled with wood ashes to insure against cut-worms. We failed to do this one season, and during a dry period in April the worms played havoc with the young shoots in the phlox bed.

Liquid manure, a really necessary part of one's garden equipment, is sometimes omitted from the amateur gardener's accessories because it is thought bothersome to prepare or its storage presents difficulties. I can sympathize with my brothers, for have I not been through the throes? At first we used a small sunken barrel as a receptacle, but later replaced it with a forty-five-gallon ash



How success was attained in growing the water-loving Japanese iris (*I. laevisgata*, known to the trade as *I. Kaempferi*). A slightly sunken bed in a sunny position and plenty of water all summer



Transient annuals soon gave way to permanent perennials. The foxgloves and Sweet Williams border the pergola of which the clothes posts are a part

The receptacle for liquid plant food which is so often an eyesore was made unobjectionable by sinking an iron ash-can which could be covered

can, the can with cover costing \$3.25. A five-pound package of sheep manure placed in this barrel filled with water makes a mixture of the proper strength for a safe fertilizer. Let it steep a day or two before using. After the can is half emptied there will be enough virtue left in the sediment at the bottom to warrant filling again with water before adding more manure.

The first year that we raised hardy perennials from seeds autumn found us without

definite plan for the protection of the little plants. Having no coldframes we covered the seedlings with leaves and litter, with the result that the ground did not freeze and the plants were all smothered. Early in the following fall any young plants to be carried over were shifted to a raised bed and when cold weather set in they were covered with a strip of chicken wire on sticks about three inches above the plants. Over this was placed two inches of straw, with a few dried

plant stalks to keep it loose and allow circulation. We banked the sides with leaves, the wire being bent at the edges to keep them from the plants. Here we successfully carried over our entire family of seedlings. Not one of the plants died, and they all retained their foliage all winter.

My garden may be a "poor thing," but it is "mine own." No hand other than mine has dug in it after the first heavy labor was finished.



Two clothes posts moved closer together and covered with vines formed the basis of a pergola. A galvanized-iron hook and cleat for the clothes line cost fifty cents

A Complete Garden for a Family of Six

BY TWO PROFESSIONAL GARDENERS. A PRACTICAL SCHEME FOR RAISING PLENTY OF FRUITS, VEGETABLES, AND FLOWERS WITH A MINIMUM OF LABOR AND EXPENSE AND A MAXIMUM OF BEAUTY—A PLAN FOR ONE ACRE, AND HOW TO ADAPT IT TO A HALF OR QUARTER OF AN ACRE

[EDITORIAL NOTE.—By reason of the facts above stated, this plan seems to us the best we have ever seen, and to show our sincerity we offer a prize of fifty dollars for a better plan and article, to be published a year from now. The new plan must actually be tested this year as to its main features. "Ideal" plans will not do. The planting suggestions represent, in all substantial respects, what is done in the garden of Mr. Joseph Eastman, Tarrytown, whose estate superintendent, Mr. William Scott, has supplied the quantities given below, after an experience of twenty-five years. The design and text are furnished by Mr. James T. Scott.]

IN THE accompanying sketch (which is planned for 200 feet square, or almost one acre) we have endeavored to give as concise and complete a scheme as possible to supply a family of six grown persons with fruit, flowers and vegetables throughout the entire season, providing also for a well-filled fruit room and vegetable cellar all winter, and plenty of material for canning purposes.

The ideal conditions for a garden are these: The situation well sheltered from the north and northwest winds, and sloping gently toward the south. The warmth and protection will advance the season by at least two weeks, and there will be no need of artificial drainage.

Twenty-five team loads of well-rotted manure is the minimum quantity for one acre. Spread this evenly over the whole area and plough it under as deeply as possible. A man with a pair of horses should plow and harrow this in one day. After harrowing stake out the roads, dividing the garden into four equal parts. Use a strong line or straight-edge, and get the sides perfectly even and straight. The roads should be at least eight feet wide. Narrow paths not only look bad but they also hamper all subsequent operations.

Now grade off the ground at each side of the roads until a perfect level or even slope, as the case may be, is made. This done, it is an easy matter to grade the rest of your ground to them.

Having got the grades and levels, it is time to make the edging. There is room for individual fancy here. It may be a six- or eight-inch board one inch wide and fastened securely to 2 x 4-inch posts, driven firmly into the ground to within two inches of the top; fancy tile, or ordinary brick, set on end, leaving two inches above ground; long pointed stones, put down in the same manner; the evergreen boxwood (*Buxus sempervirens*) may be planted; or sod cut from old-established pasture lots may be laid. Sod for this purpose should be twelve inches wide, and it must be perfectly straight on both edges. It is a cheap edging, and looks as well as any, but entails a good deal of work during the summer in keeping it cut.

Now for the road: Dig out the top soil to the depth of twelve or fifteen inches, carting it to fill in any hollow places, or spread it evenly over the surface to increase the depth of the garden soil. Gather up all stones that are larger than hen's eggs and spread them evenly over the bottom of the road bed. It is unlikely that enough stones will be found to complete the bed, but coal ashes can be used instead. Fill up this to within an inch and a half of the top and

finish off with gravel or pulverized blue stone, roll down thoroughly, and you will have a permanent road that will be both hard and dry.

If a hedge is planted on the east, north and west sides it will certainly add to the picturesque effect of the garden. Select California privet (*Ligustrum ovalifolium*), Japan barberry (*Berberis Thunbergi*), or hemlock (*Tsuga Canadensis*). The barberry and privet bushes should be planted fifteen inches apart, requiring 450 in all. Strong plants of privet will cost from \$6.00 to \$10.00 a hundred, and barberry that will look like anything will cost \$25.00 a hundred. Hemlock makes a beautiful evergreen hedge, and planted eighteen inches apart will require 385 plants. Well-grown hemlocks, bushy plants two to two and one-half feet high, will cost \$50.00 a hundred.

At the ends of the roads that lead to the north, east and west sides, and on a line with the hedge, are arches covered with climbing roses. Crimson Rambler, Dorothy Perkins, Lady Gay or *Clematis paniculata* will add considerably to the general effect.

Around the garden, but inside the hedge line, so as to shade the garden as little as possible, plant fruit trees. The apple trees, being the largest growing and requiring most room, should be planted at the north end. Eight trees will yield an abundance of fruit for summer and fall use, as well as plenty to store away for winter. When buying plums secure extra large trees; it pays. The price is from fifty to seventy-five cents each. It is better to buy small peach trees, which can be purchased for twenty-five cents each or even less. In a table further on in this article the seasons of harvesting the crops are indicated.

The fifty-foot-wide border on which these fruit trees are planted may be cultivated during the first few years, and small-growing, short-season vegetables, such as lettuce, radishes, etc., can be planted between the trees. It would add much to appearances, however, if lawn-grass mixture was sown here and the surface kept mown. Of course it would be necessary to cultivate a small space around each tree, and also a strip about one foot wide along the hedge. If the grass is allowed to grow close up to either of them damage is likely to result from the use of the lawn mower, and again there is the large question of whether there should be grass at all.

The plot marked No. 1 on the plan is devoted to small fruits and permanent roots, and has the lines running east and west. Twenty-five feet distant from the hedge (thus leaving ample room for the

development of the apple trees) is a row of grapes. The twelve vines are planted six feet apart and are to be trained on a trellis. Two-year-old grape plants cost twenty-five cents each. Six feet from the grapes plant one row of blackberries, allowing three feet between the plants. These plants may be secured at seventy-five cents a dozen. The next row, still six feet distant, is for raspberries, allowing two and a half feet between the plants. These cost a dollar and a half a dozen. Next come red currants and gooseberries, the currants costing one dollar a dozen and the gooseberries two and a half dollars a dozen. Rhubarb and horseradish are planted in the small-fruit section, because they are permanent plants and must not be moved every year. They occupy the next row, leaving room for five lines of asparagus (three feet between the lines and two feet between the plants in the lines). Extra strong four-year-old asparagus roots cost about three and a half dollars per hundred. Six lines of strawberries complete the fruit patch. Allow two and a half feet between the rows and eighteen inches between the plants in the rows. This is the only part of the plot in which rotation of crops is followed, potatoes and strawberries alternating.

Plots II., III. and IV. are devoted to vegetables and are to follow a sort of rotation. For instance, next year plant the various crops in the same relation to each other, but plot number III. becomes number II., plot number IV. becomes number III., and plot number II. becomes number IV. When the strawberry bed made on plot I. is to be renewed potatoes may be put in its place, the new strawberry patch taking the place of the potatoes in any of the vegetable plots. On the side of each plot and bordering the road is a five-foot border for flowers—a small pathway, one foot wide, is allowed at the back of each border. This will be found a great convenience for working the various plots. It should be used for all necessary traffic, and will prevent trampling and disfiguring the border by continual crossing and recrossing. This path should be properly made. Measure five feet from the path at each end of the plot, stretching the garden line from point to point, and with a spade or flat shovel dig a small trench three inches deep and twelve inches wide, scattering the soil evenly over the vegetable plot. By having the walk a little lower than the surrounding ground it will not be obtrusive, and there will be less likelihood of encroaching on either the flower border or the vegetable plot when you have occasion to use the path.

The tables given later indicate the best

varieties to plant for a succession of crops in the order indicated.

Certainly they are not the most useful spots in the garden, but they are the prettiest, and merit as much care and planning as the more utilitarian divisions. We must have roses, and there is no other thing in the entire garden that will respond better to good treatment. If the soil is of a light friable nature take away some of it, replacing by several inches of heavy turfy loam and well-decayed manure well mixed; old manure from the cow barn is preferred. Three team loads will be none too much for the rose

but the variety of peonies and irises is so great and so beautiful, that it is our only excuse. The border will hold three rows, the peonies at the back. They should all be planted two feet apart in the rows.

Dahlias are becoming more and more popular for late summer and early fall flowers. Give them abundance of water and there will not be another spot in the whole garden during the autumn months that will give such pleasure. Three rows can also be planted in this border, but the plants must be four feet apart in the rows, the middle row alternating with the others. Altogether

rows, the plants twelve inches apart in the rows.

There are two borders devoted to annuals. A row of pansies along the front of each, planted out before Easter, will brighten them until such time as the other occupants are large enough to make a display. Everything else for the border can be sown there directly after May 1st, except sweet peas which can be sown in April in clumps along the back. Nearly all the best kinds can be bought for five cents a packet.

The variety of flowering plants from which a selection can be made to fill the herbaceous border is so great that an enumeration of the possibilities would be nearly a reproduction of a seed and plant catalogue. Of course there are certain principles that should be followed. It is better to sow thinly in irregular patches rather than in straight or in any evenly spaced design. The taller growing plants will be placed at the back, with a foreground of very low-growing kinds. For five cents a packet everything that is really necessary for the annual border can be purchased, and the total cost for the entire space allotted need not be more than two dollars.

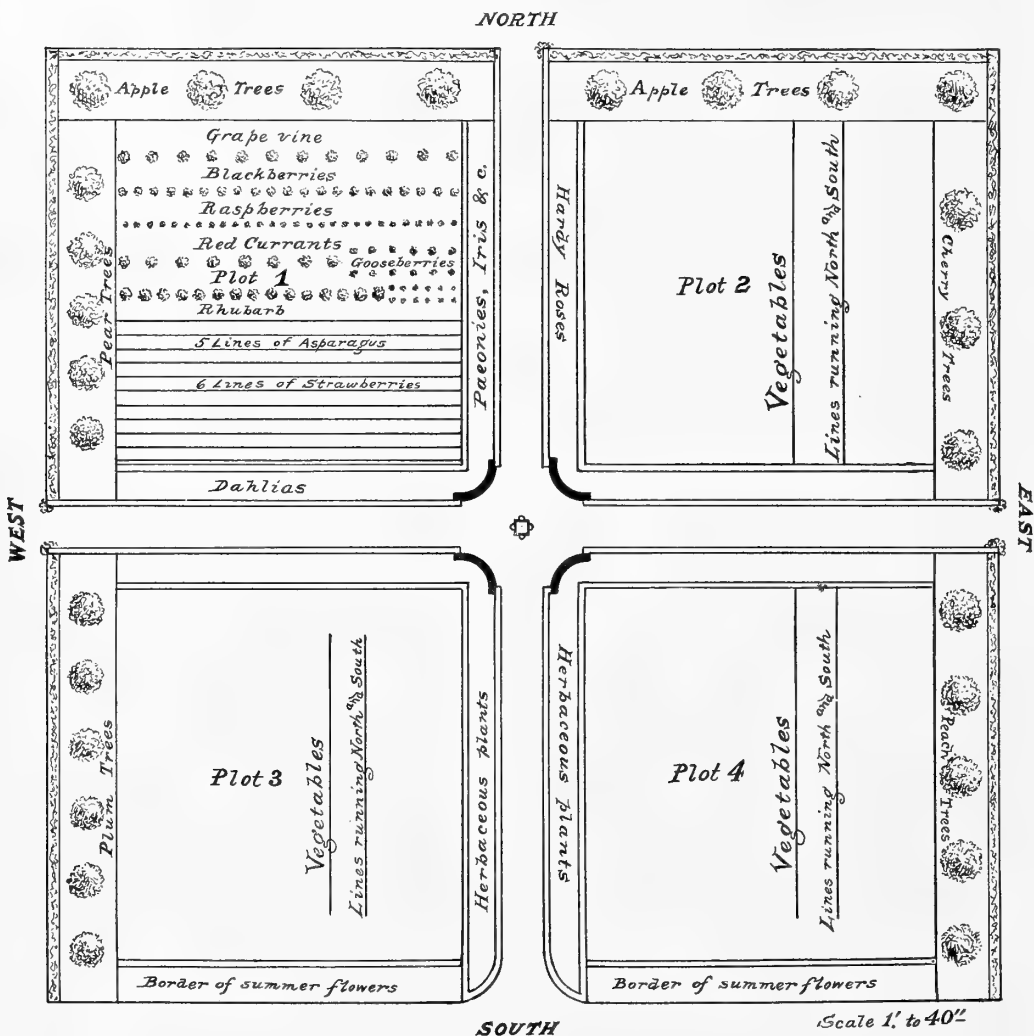
In the herbaceous borders there is a greater opportunity for individual taste and expression. There is a great deal to be said in favor of the herbaceous border as compared with the annual border, because once planted it is a permanent feature and becomes richer in its effect year by year. The soil should be well prepared and the space allotted will accommodate four rows of plants. Of course these are not to be set in rigid lines but grouped in masses, allowing about four or five plants, according to vigor of growth, from the front to the back of the border. Such plants as phloxes, asters, monk's-hood, larkspur and rudbeckia are desirable here. Next to the back row, one and a half feet from it, the plants alternating and also three feet apart, plant such things as Japanese anemones, chrysanthemums and lilies. Eighteen inches in front of this row, two feet apart in the line, plant phloxes, hybrids of maculata and paniculata. There are over fifty varieties of them in use, and they succeed one another in bloom all summer. You can also plant such things as Canterbury bells, coreopsis and foxglove.

In the front line, six inches from the edging and one foot between the plants, such early flowering bulbs should be used as snowdrops, crocuses, irises and tulips, and the low-growing phloxes. On an average the plants in this border can be purchased for one and a half dollars a dozen.

On the border running along the southern end of the garden a display of bedding plants can be made, the two sides different.

In the centre where the roads meet a sundial could be placed, or a barrel sunk to the level of the ground would furnish a water-lily garden.

As to the labor of working this one-acre garden: It could be well kept by one man, who could also do the necessary chores for the house, mow the lawn and look after a horse or cow.



The area of this garden is approximately one acre, being 200 feet square. It is planned to provide all that a family of six persons can use of fruits, flowers and vegetables. Nothing would have to be bought. Plot No. 1 is in permanent crops; plots Nos. 2, 3 and 4 are for vegetables in rotation. One man can comfortably look after such a garden

border. There is room for one hundred and fifty plants in three rows, with the plants eighteen inches apart in the rows. Some people may think this is too little room, but since there are only three rows and the plants can be conveniently reached it will be ample. The hybrid perpetuals will cost fifty cents each, and the others (except Mildred Grant, which is seventy-five cents) will cost thirty-five. Plant the hybrid perpetuals at the back, Maman Cochet and Gruss an Teplitz in the front row, using the others to fill out the front and middle rows. The border opposite the roses is recommended for peonies and iris. It seems a large space,

about five dozen plants can be accommodated, costing approximately, in small pots in the spring, \$3.50 a dozen.

The border opposite the dahlias may be devoted to gladioli, tuberose, montbretias and various bulbs; also to stocks, asters, zinnias, marigolds, balsams, celosia, and such things as are raised from seed in the hotbed or in boxes in the window in early spring and planted outdoors about May 20th, when danger from frost is over. These subjects are all useful for cutting and come into flower after the peonies and iris are gone, and before the dahlias are ready to cut. The space allotted will accommodate four

1. *Reduction by one-eighth.*—Omit the fruit trees on the three sides and the border of summer flowering plants at the southern end. (This also means the doing away with the grass border that surrounds the garden.) The fruit trees might be massed in some other place, and the flowering plants used in beds elsewhere.

2. *The one-half acre.*—Cut the plan in two. Reduce the paths to six feet, and use only one-half the quantities enumerated. Peas and beans would be reduced to a minimum, so the potatoes, rhubarb and horse-radish had better be dispensed with and their place given to peas and beans. Then use the quantities of these recommended for the one acre.

3. *The one-third acre.*—On a square lot, divide the space allowed for vegetables (say 120 x 120 feet) into three lots, do away with the cross-walks and have a two-foot path all around. The vegetables could then be grown in the same quantities as on the acre plot.

4. *The 60 x 60-foot garden.*—Reduce the quantities by half, do away with the potatoes as suggested under heading No. 2, and substitute peas and beans in the acre quantities.

In all these reduction schemes it is still assumed that the main idea in planning the garden is to maintain a full and constant supply of vegetables all the year around for a family of six persons.

Fruit trees for the quarter-acre plot, No. 1

Eight Apples

- 1 Red Astrachan (August)
- 1 Baldwin (December)
- 1 Fall Pippin (September)
- 1 Winter Greening (January)
- 1 Monstrous Pippin (October)
- 1 Roxbury Russet (February)
- 1 Northern Spy (November)
- 1 White Pippin (March)

Three Cherries

- 1 Coe's Transparent (June)
- 1 Downer's (late)
- 1 Windsor (July)

Pears

- 1 Beurre Gifford (August)
- 1 Beurre Clairgeau (Nov.)
- 1 Bartlett (September)
- 1 Easter Beurre (Winter)
- 1 Louise Bonne de Jersey (October)

Twelve Grape Vines

- 2 Duchess
- 2 Niagara
- 2 Isabella
- 2 Green Mountain
- 2 Concord
- 2 Delaware

Twenty-four Blackberry Plants

- 8 Erie
- 8 Snyder
- 8 Wilson, Jr.

Thirty Raspberry Plants

- 15 Golden Queen
- 15 Cuthbert

Eight Currants

- 8 Prolific

Twelve Gooseberries

- 6 Industry
- 6 Downing

Two Hundred Asparagus Plants

- 100 Palmetto
- 100 Colossal

Three Hundred Strawberry Plants

- 100 Marshal
- 100 Nick Omer
- 100 Sharpless

Six Plum Trees

- Abundance
- Imperial Gage
- Shropshire Hero
- Burbank
- Coe's Golden Drop
- Reine Claude

Horseradish and Rhubarb

- 12 Rhubarb in single row 4 ft. apart
- 30 Horseradish in double row 1 1/2 ft. apart

Peaches and Nectarines

- Alexander (August)
- Stump of the World (late)
- Crawford Early (August)
- Elruge nectarine (early)
- Elberta (September)
- Lord Napier nectarine (late)

Planting list for plot No. 2

No. of Rows	Space in Feet
2 pole limas, 3 1/2 feet apart	7
1 parsnips	2
1 salsify	2
1/2 eggplant	2
1/2 peppers	2
1 leeks	2
6 late potatoes, 3 feet apart	18
1 cucumbers	6
5 corn in succession, sown May 1st, 10th, 30th, 4 feet apart (pumpkins and late squash to be sown between rows of corn)	20
1 early cabbage (cleared in time to sow one row corn June 20th, one June 30th)	3
1 early cauliflower (cleared in time to sow one row corn June 20th, one June 30th)	3
1 early turnips (cleared in time to sow one row corn June 20th, one June 30th)	2
2 late peas sown April 17th and May 1st (cleared in time to sow last two rows corn one July 8th, one July 16th)	8
Total for the 23 rows	75

Planting list for plot No. 3, beginning west side

No. of Rows	Space in Feet
2 onion sets at two feet apart	4
1 beets	2
1 Carrots	2
1 bush beans	3
1 kohlrabi	3
2 peas, 4 feet apart	8
First sowing of spinach to be between the rows of peas	—
Total for the 8 rows	22
(This plot will be cleared by July 1st; to be sown in late carrots, rows 2 feet apart.)	

4 early potatoes, at 3 feet apart	12
1 spinach (second sowing)	2
1 beets	2
1 bush beans	3
1 carrots	2
1 turnips	3
1 kohlrabi	3
1 bush limas	3
Total for the 11 rows	30
(This plot will be cleared by July 20th, and will accommodate six rows of celery.)	

2 succession cabbage, 3 feet	6
1 dwarf Erfurt cauliflower	3
2 corn, Cory and Minnesota, at 4 feet apart	8
Total for the 5 rows	17
(Cleared August 1st, to be sown with rutabaga turnips.)	
1 row muskmelons (will be cleared about August 15th to be sown in winter beets)	6
The 25 rows for No. 3 will require	75

Planting list for plot No. 4, beginning east side

No. of Rows	Space in Feet
2 tomatoes, 5 feet	10
1 okra	3
1 New Zealand spinach	5
1 watermelons	5
1 summer squash	4
2 Brussels sprouts, 3 feet apart	6
6 onions, 18 inches apart (this onion ground will be cleared by August 20th, to be sown in Yellow Stone turnips for winter)	8
1 muskmelons (second sowing). (Will be cleared about August 20th, to be sown in winter spinach)	8
The next twenty feet should be kept for making successional sowings of lettuce and radish, beginning about April 6th, and sowing at intervals of fifteen days, as the lettuce and radish are harvested. Three sowings of bush beans should be made from July 1st to August 1st, and two rows of endive sown about August 10th	21
1 cabbage, cauliflower, and Brussels sprouts (follow this by last sowing of lettuce)	2
1 parsley (sown one foot from border)	3
Total for the 17 rows and 20 extra feet require	75

SEEDS LIST

Quantity	Price
1 pint Early Mohawk Bush bean	\$.15
1 " Rustless Golden Wax bean	.15
1 quart Refugee bean	.20
1 pint Drear's Bush Lima bean	.15
1 " Drear's Pole Lima bean	.15
1 " King of the Garden Pole Lima bean	.15
1/4 pound Eclipse beet	.10
1/4 " Edmunds' Blood Red beet	.15
1/4 " Dewing's Improved beet	.15
1 package Brussels Sprouts	.10
1 " Early Jersey Wakefield cabbage	.10
1 " Succession cabbage	.10
1 " Premium Flat Dutch cabbage	.10
1 ounce Early Scarlet Horn carrot	.10
2 " Danvers Half-long carrot	.20
1/4 pound Long Orange Improved carrot	.25
1 package Snowball cauliflower	.25
1 " Dwarf Erfurt cauliflower	.15
1 " White Plume celery	.10
1 " Golden Dwarf celery	.10
1 " Crawford's Half Dwarf celery	.10
1 pint Early Cory sweet corn	.15
1 " Early Minnesota sweet corn	.15
1 " Moore's Concord sweet corn	.15
1 quart Country Gentleman sweet corn	.25
1 package White Spine cucumber	.05
1 " Cool-and-crisp cucumber	.05
1 " New York Spineless eggplant	.05
1 " Green Curled endive	.05
1 " Broad-leaved Batavian endive	.05
1 ounce Early White Vienna kohlrabi	.20
1 package Musselburgh leek	.05
1 " Boston Market lettuce	.05
1 ounce Deacon lettuce	.20
1 " Emerald Green muskmelon	.15
1 " Millar's Cream muskmelon	.15
1 " Mountain Sweet watermelon	.15
2 " Southport White Globe onion	.20
2 " Yellow Globe Danvers onion	.20
1 " Red Wethersfield onion	.10
1 quart White onion sets	.20
1 package White Velvet okra	.05
1/4 pound Long Smooth parsnips	.15
1 ounce Extra Curled parsley	.10
3 pints First of All peas	.30
3 " Gradus peas	.50
6 " American Champion peas	.40
1 package Sweet Mountain pepper	.05
1 " County Fair pepper	.05
1 bushel Bovee potatoes	5.50
1 " Carman, No. 3 potatoes	5.50
1/4 pound Large Cheese pumpkin	.15
1/4 " Early Scarlet Turnip radish	.15
1/4 " White-Tipped Scarlet Turnip radish	.15
1/4 " Sandwich Island salsify	.30
1 " Long Standing spinach	.15
1/4 " New Zealand spinach	.25
1 package Summer Crookneck squash	.05
1 " Vegetable Marrow squash	.05
1 " Boston Marrow squash	.05
1 " Earliana tomatoes	.05
1 " Acme tomatoes	.05
1 " New Stone tomatoes	.05
1 ounce Early Purple Top Milan turnip	.10
1 " White Egg turnip	.10
1 " Purple Top White Globe turnip	.10
1 " Yellow Stone turnip	.10
1/4 pound Laing's Improved rutabaga	.15
3 packets herbs (sage, thyme and savory)	.15

Cost of seeds for one acre \$16.90

All the above are old, well-tried varieties that are sure to do well in any section of the country. If it is desired to try newer kinds, it is wise to try them on a small scale at first, as soil and climatic influence have a good deal to do with the success of the individual varieties, and it is well to make sure that the variety is well suited to your particular case before trusting it for general crop. We can give only a general idea of average garden essentials for average conditions. Of course there will be particular cases where changes must be made. Consider soil, exposure, climate, water-supply and plant in reference.

A Garden for Three—By W. F. Fairbrother New Jersey

HOW A SUBURBAN GARDEN 22X34 FEET WAS MADE TO SUPPLY ALL THE VEGETABLES NECESSARY FOR A FAMILY OF THREE—EVERY BIT OF EARTH YIELDING AT THE RATE OF THREE CENTS A SQUARE FOOT—SHOWING WHAT BEGINNERS MAY ACCOMPLISH BY FORETHOUGHT—AN IRRESISTIBLE ARGUMENT IN FAVOR OF PLANNING

Photographs by the author

IT WAS our first effort at a real garden, but we knew the initial move was to send for the catalogues, which we did last January. The first number of THE GARDEN MAGAZINE had just appeared and had stirred us up to do things. After deciding upon what we needed most, a planting plan was made, embodying suggestions from the magazine.

Here is the plan, with dates of planting, which were followed religiously, any deviation therefrom being for a few days at most.



The cucumber beetle was kept off by encircling each hill with a strip of tin, 6 x 50 inches, stuck two inches in the ground and supporting a cover of mosquito wire. Lifting the lid for examination

Twelve patches in all, exclusive of the tomatoes, which were planted along the west and north fences.

The fence was of 3-foot poultry wire fastened to 2 x 4 chestnut posts driven about fifteen inches into the ground; that part of the posts that was under the ground was given a thick coating of liquid tar, which will preserve them for a number of years.

The various patches are all ten feet long, and the rows were planted eighteen inches apart, except patch No. 5, beets (rows twelve inches apart); patch No. 6, onions (rows eight inches apart); patch No. 7, radishes (rows eight inches apart).

For these things the space given has proven ample. For the other things eighteen inches between the rows was quite sufficient, except in the case of the dwarf limas, which require at least twenty-four inches unless you want to prop up each plant, which is a most tedious job for small returns. I will not grow them again, deciding rather to buy my limas from the grocer next season, for, besides the care required, they take up a great deal of room from May to September and the crop is comparatively small.

Of the green string beans, wax beans, beets, cucumbers and tomatoes we have had all that a family of three could comfortably use in an ordinary way.

The following is a conservative summary of the outlay and revenue:

DEBIT	
Manure, 1 double load	\$2.50
Fertilizer, 50 pounds .....	.75
Poultry wire, 50 yards	2.50
Posts, 12 at 12½ cts.	1.50
Tin strips, 4 .....	.25
Seeds	1.55
Tomato and pepper plants .....	.40
Total	\$9.45
CREDIT	
Lima beans, 7 quarts at 12 cts. per quart	\$0.84
Brussels sprouts, 12 quarts at 25 cts. per quart	3.00
Onions (white), 15 quarts at 15 cts. per quart	2.25
Peas, 3 quarts at 10 cts. per quart .....	.30
Beans, 38 quarts at 10 cts. per quart	3.80
Cucumbers, 200, at 1 ct. each	2.00
Peppers, 150 at 1½ cts. each	2.25
Muskmelons, 19 at 8 cts. each	1.52
Turnips, 96 at 1½ cts. each	1.44
Beets (425), 106 bunches at 3 cts. per bunch	3.18
Radishes, 75 bunches at 1½ cts. per bunch	1.13
Lettuce, 81 heads at 5 cts. per head	4.05
Tomatoes, 6 bushels at 50 cts. per bushel	3.00
Parsley, estimated at .....	.75
Total	\$29.51

The cost of the poultry wire and posts used for the fence, amounting to four dollars, is an expense which will not have to be reckoned again for several years, and with this credited a balance of \$24.06 is shown in favor of a home garden.

Now, to take each patch separately, explaining in detail how it was handled:

PLANT BUSH LIMA BEANS LATE

Four rows, eighteen inches apart (should have been at least twenty-four), planted respectively May 1st, May 15th, June 1st and June 15th. Seeds were dropped about four inches apart in the rows. Lima beans require a rich soil, and should not be planted until the soil is quite warm—not before the end of May. My first two plantings rotted in the ground because it was not thoroughly warmed. These two rows were re-sown on June 5th and did well, as was the case with the other June plantings. The entire crop of limas was about seven quarts.

SUCCESS WITH BRUSSELS SPROUTS

Sowed four rows May 15th, sprinkling the seeds thinly. When about two inches high they were thinned so that the plants stood about six inches apart, and on July 15th each alternate plant was transplanted to patch No. 10, from which the peas were all gone. Thus we had two patches of Brussels sprouts, each of four rows, with the plants standing a foot apart. These thrived well, and on October 20th (after a couple of heavy frosts) we ate our first mess of them. The balance was left in the ground until November 1st, when they were withdrawn by the roots and hung head down in the cellar.

Cucumbers require a rich, sandy, well-drained soil, and, as is the case with lima beans, do not do well until the ground is warm. The plantings of May 1st and May 15th produced much weaker and less productive vines than the plantings a couple of weeks later.

Holes fifteen inches in diameter were dug to a depth of eight inches, and below that the soil was well loosened with a spade. Then a fork of well-rotted stable manure was put in each opening, and on top of this four or five inches of good light soil, making a mound with a flat top about two inches higher than the ground about; on this flat surface was sown a dozen seeds.

BEATING THE CUCUMBER BUGS

Having heard how the beetle attacked the cucumber plants in their youngest days, and how later the cut-worm got in his deadly work, I contrived a scheme which baffled both of these nasty enemies of the cucumber. I obtained a strip of heavy tin, six inches wide and fifty inches long, for each hill, of which I formed a little circular fence around the plants by pushing the tin two inches into the ground; over the top of this I laid a piece of fine wire screen. After the plants were an inch high I thinned them out, leaving just six in each hill, and put away the screens until next year, for the beetles do not trouble the plants after they get the third leaf. The

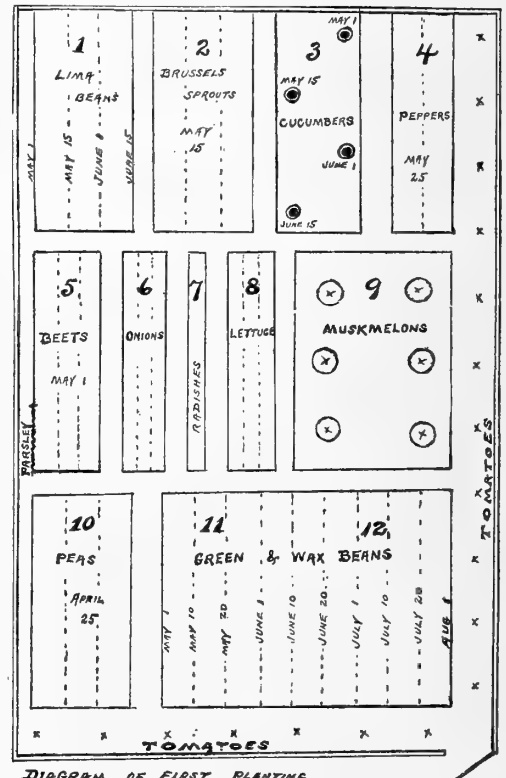


DIAGRAM OF FIRST PLANTING
This garden, 22 x 34 feet, made by a beginner, supplied a family of three with all its vegetables



Peppers planted on May 25th gave a yield that supplied the wants of the family and also left plenty to give away to the neighbors

tin fences, however, were left in place all season, and we have no regrets for so doing, for the cut-worm is not particular about youth in the plants; a number of vines in a neighbor's garden were cut off right at the ground just as they were beginning to yield good fruit. My barrier was effective, for this worm, which travels along the surface, could get neither under nor over it. The four hills gave us more than we could use.

GREEN AND RED PEPPERS TO GIVE AWAY

About May 25th I purchased one dozen plants each of red and green peppers from a farmer, and had peppers to give away. They were planted in rows eighteen inches apart, and twelve inches apart in the rows.

BEETS AND PARSLEY MAKE NO TROUBLE

One of the most enjoyable things in the garden, and no trouble whatever. On May 1st these were planted in rows a foot apart, and when the plants were four inches high we thinned them so that they stood about three inches apart. The young plants (tops and all) stewed as spinach make a vegetable fit for the gods—and insurance kings.

In one corner of the beet bed we planted a row of parsley three feet long and had all we wanted, even after considerable snow had been on the ground. Soak parsley seeds over night in tepid water before planting.

THE ONIONS WERE NOT ENOUGH

Here's where we erred in not planting enough. On April 15th we planted two rows of seeds for young onions, and had them in September. The main thing to note, however, is that April 15th is none too early to plant onion seeds. Do not sow too thickly, and thin to two inches apart. In the first week of May we planted two rows of onion sets about three inches apart in the rows, and had just about half enough.

Next year our onion bed will be about doubled in size. Planting in rows about eight inches apart gives plenty of room, if you have an onion hoe to keep the ground loose and hilled up a little. There is an onion hoe on the market, long and narrow but triangular in shape, that is most handy for getting in narrow places in order to keep down the weeds. Give onions rich soil.

RADISHES THE EASIEST VEGETABLE TO GROW

The most easily grown of all vegetables do not require much room, as the rows do not need to be more than eight inches apart. Sow thinly, and when the plants are a couple of inches high thin so as to leave about two inches between the plants. For a family of three, sow two and one-half or three feet every ten days from May 1st to June 20th, and then discontinue planting till September 1st, for radishes do not thrive in the very hot weather. Keep a little



There is much satisfaction in growing an abundance of beets. The young plants, tops and all, may be served as spinach. The surplus roots are stored in the cellar for winter use and are most welcome

chemical fertilizer on hand (fifteen pounds costs about 25 cents), and as you use the radishes drop a little of the fertilizer in the opening just made and sow two or three seeds. In three weeks you will have the pleasure of again picking from the same ground. What were left of the radishes by the end of July were tough and pithy, so we dug them up and, after giving the ground a good dose of fertilizer, planted a single row of yellow turnips, which proved well worth while. When an inch or so high these were thinned so as to leave four plants to the foot, and were ready for use late in September.

THE LETTUCE WAS STARTED IN THE CELLAR

Was planted first in boxes in a southern cellar window about April 1st, and on April 15th a few more seeds were added. As the plants came up they were thinned out so as to leave about an inch between them. In the first week of May the box was put

outside and covered with burlap at night, to keep off frost. After a few days, during which the little seedlings became accustomed to the open air, they were planted in the open ground, the first two rows being given to the two cellar plantings. They were set out about six inches apart in the rows. The remaining two rows were used for various sowing, from May 15th to July 1st. On August 25th what was left of the lettuce was torn up, the ground turned and fertilized, and three rows of white turnips were sown a foot apart. These were thinned when they were about two inches high so as to leave about three inches between them, and kept hilled up a little. About October 20th nearly a bushel were dug up and put into the cellar for future use.

MUSKMELONS ONLY A PARTIAL SUCCESS

They were started in the cellar about April 15th in little paper pots, and transplanted to the open ground, prepared as for cucumbers, about May 25th, when all danger of frost was past. Four of them were planted in each hill, and while all but three of the transplanted seedlings seemed to thrive, they yielded only nineteen melons during August and September.

I shall not plant them again, on account of the amount of trouble in raising them in the latitude of New York City and because of the amount of space required. Our six hills took up 7 x 10 feet.

BUSH PEAS NEED TOO MUCH ROOM

These peas are not worth while for so small a space, so I shall not plant them until I can spare about ten times as much. The four 10-foot rows yielded only about three quarts of peas in all. This patch was later used for the Brussels sprouts transplanted from their original patch.



Turnips from the home garden are a revelation as to quality. A successful crop was gathered from August sowing, after lettuce



Too bad that these Brussels sprouts could not be screened like the cucumbers. The worms riddled the large leaves but the "sprouts" were untouched

Ten rows eighteen inches apart permitted the planting of one row every ten days from May 1st to August 1st, alternating the plantings of green and wax beans. These gave all the string beans that a family of three could possibly want. We had them right along from June 18th to October 14th. About the first of August, when the first sowings of

beans had finished their work, the plants were taken up and five rows of beets for winter use were put in.

TOMATOES—LAST BUT NOT LEAST

About May 20th we purchased eighteen tomato plants from a gardener for 15 cents, and set them out three feet apart along the west and north fences of the garden. As the plants grow very rank, it is necessary in a small garden to give them some support. For this we broke up an old packing case, from which we cut strips three feet long. Three of these were driven in the ground around each plant, and with shorter strips nailed across the top made a triangular frame two feet high, which was quite sufficient for our purpose. This was the only attention the tomato plants received from us, yet the crop was approximately six bushels.

ONE REASON FOR OUR SUCCESS

A word on the preparation of the soil might be well. About April 10th, or ten days after the ground had been turned over, I purchased a load of well-rotted stable



Tomatoes still a-plenty on October 29th—six bushels from eighteen plants, without any attention beyond staking to keep them off the ground. An easy crop!

manure, which was raked over the entire garden and then thoroughly mixed with the soil.

There were two rules which we framed and followed closely from May till September, viz.: (1) Keep the ground loose; (2) Keep all the ground busy all the time.

A Winter Campaign Against Scale Insects—By E. P. Felt New York State Entomologist

THE SAN JOSÉ AND THREE OTHERS THAT ARE OFTEN CONFUSED WITH IT. LOOK OUT FOR THE WORST INSECT PEST OF MODERN TIMES

THE Southern gardener especially should attend to spraying his fruit trees in January, and even in the North the practice will be profitable. The San José scale is the worst of all the scales. In the Southern States it is particularly destructive because of its long breeding period, the young appearing from May until the following January.

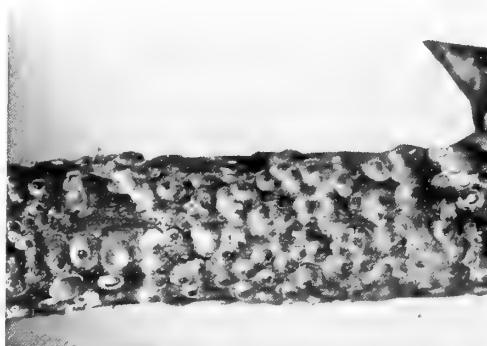
This scale chooses the valuable fruits for its victims—peach, plum, cherry, pear and apple, in the order named, and devours many ornamentals and the useful currant beside. It is circular, grey, and produces a reddish color on the bark which it infests. Its presence may be easily detected by the yellow juice which exudes when the blade of a knife or even the thumb nail is drawn firmly along the infested shoot.

There are three other scales often confused with the San José, but no one of them so deadly nor so hard to deal with. They are:

The West Indian Peach Scale, which according to State Entomologist Smith of Georgia ranks next to the San José in danger, and has shown itself capable of destroying

entire peach orchards in the South. The scale is about one-twelfth of an inch in diameter, of a greyish white color, with a reddish yellow nipple a little to one side of the centre. The male scales are snow white and linear. This need never be confused with the dark grey or black scales of the San José.

The Oyster Scale is of light brown, about an eighth of an inch long, slender, and pear-shaped, usually slightly curved. It winters in the egg and sometimes forms a thick dirty white incrustation like that of the West Indian Peach scale, but not so yellow.



The West Indian peach scale often confounded with the San Jose scale, which it resembles in color and form, but is larger (about 1-12 inch in diameter)

The Scurfy Scale, white or greyish-white, is about one-tenth of an inch long expanding regularly from a slender tip.

The last two thrive upon young apple trees, ash, willow, poplar and Japanese quince. Both may be controlled by thorough spraying with either a whale-oil soap solution, or a kerosene emulsion applied when the crawling young are most abundant.

But to fight the deadly San José and to a certain extent the West Indian Peach Scale, quite different tactics are necessary. A "winter wash" must be applied. Preparations of crude petroleum have been found useful applied in the winter, but we depend almost entirely on a lime-sulphur wash put together in the following way:

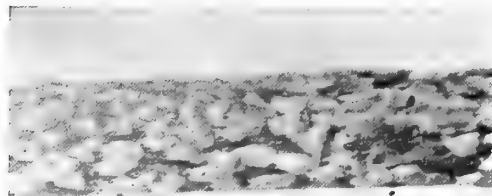
Bring a few pails of water nearly to a boil in a large iron kettle, add 20 pounds of good stone lime following immediately with 15 pounds of flowers of sulphur. Stir at once and keep boiling rapidly for at least thirty minutes; then remove, strain through a wire screen such as ordinary mosquito netting and dilute with cold water to fifty gallons.

An unboiled wash may be made in a barrel or tub, slaking the requisite amount of lime with warm water; add the sulphur and then 10 to 12 pounds of sal soda. Stir till the slaking is practically completed, cover with burlap and allow it to stand about 30 minutes or more. Strain and dilute as for other washes.

Another self-boiled wash is made by substituting from 4 to 6 pounds of caustic soda for the sal soda mentioned above.



The commonest scale on fruit and ornamental trees is the oyster scale. Its shape distinguishes it from the San Jose scale



The scurfy scale is common on roses as well as on fruit trees. It is comparatively easy to control with whale-oil soap

Garden Wonders in a 25 x 35 Backyard—By I. G. Tabor New York

MAKING A GARDEN "WHERE THERE ISN'T ROOM FOR ONE"—SIX HIGHLY ORIGINAL PLANS THAT WOULD COST YOU ORDINARILY \$100 EACH—A ROSE GARDEN, A WATER-LILY GARDEN, A "WINTER GARDEN" OR "OUTDOOR NURSERY" AND A GARDEN WITH A LAWN, HARDY BORDERS AND A PERGOLA

EDITOR'S NOTE:—Ever since Professor Bailey's article, of pleasant memory, in the first number of THE GARDEN MAGAZINE, entitled "Originality in Gardens," we have been glad to publish such accounts of actual gardens showing creative imagination and artistic sense as our readers have sent us from their own experience. The one described by Mr. Henry G. Taylor elsewhere in this number is an example. But the smaller the garden the harder to make it beautiful and distinctive. It is the same sort of problem that made the great architect, Richardson, take an interest in a man who wanted a \$1,500 house. The extraordinary difficulty of such a proposition appealed to him, but when the client announced that he could spend \$3,000 the architect simply waved him aside.

We have therefore called in the services of a landscape gardener to help us on the hardest gardening problem we could think of—the situation that thousands of people in New York, for instance, have to confront—the typical 25 x 35 backyard.

We need plans of the widest possible application. THE GARDEN MAGAZINE now offers a means by which such plans can be presented to the people. We hope that everyone who has consummate skill in planning will send us some solution of the backyard problem, as his contribution to the glorious movement for civic betterment.

PLAN A shows a different development for each of four plots, size 25 x 35 feet. Plans B and C give the same four plots thrown together into a community park with an area 50 x 70.

Number I. of Plan A has flowers in abundance in the herbaceous borders that extend along the outer side of the paths to the pergola, which is covered with flowering vines and gives seclusion.

The cost of this plan depends upon the sort of pergola used. If it is the simplest and cheapest possible—plain uprights and cross-pieces—it should not exceed \$25.00. If a more elaborate one with turned columns is desired, it may easily run to \$150.00. If the owner wants to put it up himself, the materials will cost him about \$10.00.

Number II. has an informal curved path, with shrubbery bordering it, which broadens into a graveled space around the water-lily pond. Windings and informality are never as well suited to so small a space, yet, as a concession to those who abhor formal lines under any circumstances, this arrangement is not impossible. The pond is the expensive part; it may be omitted entirely, or, instead of being excavated and cemented, it can be merely a tub sunk to the ground level. The seats beside it will cost from \$8.00 to \$10.00.

Number III. is planned for a winter garden. The central grass plot has been left for a playground, and is completely sheltered by the surrounding hedge and also by being lowered twenty inches below the general level. The coldest, stinging winter winds can hardly

reach down into this snug "outdoor nursery." At the back, framed by the clipped arch in the hedge, is the bust of a faun. Two stone benches stand at the edge of the terrace next the house, and massed peonies with flowering vines give the necessary color. This costs more, the stone benches being \$25.00 for the pair, and the faun with pedestal in



A winter playground or outdoor nursery. The high evergreen hedges will enable the children to play outdoors on cold, windy days. See Plan A, No. III.

terra cotta at least \$70.00. The grading and steps will increase it \$50.00.

Number IV. is a rose garden centering upon a rose arbor, with a path running through it, and, if one wishes, an urn within the arbor. The arbor should be put up in a day and a half, so \$25.00 is a liberal allowance for it. The two rustic seats at \$5.00,

and the urn from \$12.00 to \$18.00, make the total for these features less than \$50.00.

Plan B is somewhat informal in effect and the arrangement gives each of the four houses a pleasing view of all its features. The arbor floor is on three levels, which divide it into sections, each of which will have its chairs and benches. The cost of construction in this plan, for pool, arbor and seats, will be within \$300.00.

Plan C is on formal lines. In this the double pergola circles a terraced depression, around which runs a narrow walk. Inside this is a pool and fountain; the basin of the fountain is of champagne-glass shape, and from its rim the water overflows gently into the pool. This will cost \$500.00, not including plants nor the planting.

The community scheme does not demand that the families going into it be friends, but they must be friendly and willing to consider the good of the little park. Certain things should be agreed upon and embodied in a legal contract. Meetings at stated intervals would be necessary, and one member elected executive officer for a definite period, to pay bills, hire labor and generally oversee the whole.

Large sums are spent on the gardening of country places, where the air is already clean and pure. May not something be spent on gardening in the choked, evil-smelling city? The cost is so little compared to the permanent good it will do, and each individual needs to do only such a small part to accomplish such a great result.



A glimpse of the little "community park" which can be created, even in the heart of a densely crowded city like New York, by four neighbors whose backyards measure only 25 x 35 apiece. See Plan B, on the next page.



Another picture which these same neighbors could create, showing the central fountain with its encircling pergola, also a goodly space for lawn and flowers. The entire area is only 50 x 70 feet. Consult Plan C

PLANTING LIST, PLAN A, NUMBER I.

Key	Standard and Nursery Names.	No. of plants.	Cost
1	Japanese barberry <i>Berberis Thunbergii</i>	3	\$1.50
2	Chinese barberry <i>Berberis Sinensis</i>	1	.50
3	Peony <i>Paeonia officinalis</i>	1	.35
4	Akebia <i>Akebia quinata</i>	3	1.05
5	Japan Ivy <i>Ampelopsis tricuspidata</i>	2	.70
6	Dutch honeysuckle <i>Lonicera Periclymenum</i> , var. <i>Belgica</i>	1	.35
7	Japan clematis <i>Clematis paniculata</i>	1	.35
8	Jackman elematis <i>Clematis Jackmanni</i>	1	.50
9	Wistaria <i>Wistaria Chinensis</i>	1	.75

Total number of plants and cost.....14 \$6.05
 Herbaceous border, 25 varieties, 55 plants..... 5.00
 Total cost.....\$11.05

PLANTING LIST, PLAN A, NUMBER II.

1	Japanese barberry <i>Berberis Thunbergii</i>	1	\$0.50
2	Chinese barberry <i>Berberis Sinensis</i>	1	.50
4	Akebia <i>Akebia quinata</i>	2	.70
5	Virginia creeper <i>Ampelopsis quinquefolia</i>	3	1.05
10	Hydrangea <i>Hydrangea paniculata</i>	1	.50
11	Bamboo <i>Phyllostachys aurea</i>	2	2.00
12	Black stem bamboo <i>Arundinaria Japonica</i>	1	.50
13	Swamp rose-mallow <i>Hibiscus Moscheutos</i>	1	.25
14	Sweet elder <i>Sambucus Canadensis</i>	1	.25
15	Giant reed <i>Arundo Donax</i> , var. <i>variegata</i>	3	2.25
16	Rose of Sharon <i>Hibiscus Syriacus</i> , var. <i>Leopoldii</i>	1	.35

Total number of plants and cost.....18 \$8.85
 Water lilies (pond) *Nymphaea Mariiacea*, var. *carnea* and var. *albida* 2 1.50
 Total cost.....\$10.35

PLANTING LIST, PLAN A, NUMBER III.

3	Peony <i>Paeonia albiflora</i> , pink variety	4	\$1.40
6	Dutch honeysuckle <i>Lonicera Periclymenum</i> , var. <i>Belgica</i>	1	.35
7	Japan Clematis <i>Clematis paniculata</i>	1	.35
9	Wistaria <i>Wistaria Chinensis</i>	1	.75

PLANTING LIST, PLAN A, NUMBER III.—Continued

Key	Standard and Nursery Names.	No. of plants.	Cost
A	Irish juniper <i>Juniperus communis</i> , var. <i>Hibernica</i>	2	1.50
B	Siberian arborvitae <i>Thuja occidentalis</i> , var. <i>Sibirica</i>	2	3.00
	Hemlock (hedge) <i>Tsuga Canadensis</i>	90	29.25

Total number of plants and cost.....101 \$36.60

PLANTING LIST, PLAN A, NUMBER IV.

5	Virginia creeper <i>Ampelopsis quinquefolia</i>	1	\$0.35
7	Japan Clematis <i>Clematis paniculata</i>	1	.35
17	Standard Rose <i>Crimson Rambler</i>	2	5.00
18	Lilac <i>Syringa villosa</i>	1	.50
19	Snowball <i>Viburnum Opulus</i>	1	.35
20	Red rugosa rose <i>Rosa rugosa</i>	1	.50
21	White rugosa rose <i>Rosa rugosa</i> , var. <i>alba</i>	1	.50
22	Michigan rose <i>Rosa setigera</i> , var. <i>to-mentosa</i>	1	.50
23	Rose <i>Yellow Rambler</i>	2	1.00
24	Rose <i>Pink Rambler</i>	2	1.00
25	Red prairie rose <i>Queen of the Prairies</i>	3	1.50

Total number of plants and cost.....16 \$11.55
 Herbaceous border, 25 varieties, 55 plants..... 5.00
 Total cost.....\$16.55

PLANTING LIST, PLAN B.

1	Japanese barberry <i>Berberis Thunbergii</i>	2	\$0.70
2	Spiraea <i>Spiraea arguta</i>	1	.50
3	Hydrangea <i>Hydrangea paniculata</i>	1	.50
4	Lilac <i>Syringa villosa</i>	1	.50
6	Common Lilac <i>Syringa vulgaris</i>	2	.70
7	Rose of Sharon <i>Hibiscus Syriacus</i> , var. <i>Leopoldii</i> , fl. pl.	1	.35
8	White peony <i>Paeonia officinalis</i> , var. <i>alba plena</i>	1	1.00
9	Virginia creeper <i>Ampelopsis quinquefolia</i>	3	1.50
10	Wistaria <i>Wistaria Chinensis</i>	2	2.00
11	Actinidia <i>Actinidia arguta</i>	3	.50
12	Frost grape <i>Vitis vulpina</i>	3	1.05
13	Michigan rose <i>Rosa setigera</i> , var. <i>to-mentosa</i>	1	.50
14	Yellow jasmine (give winter protection) <i>Jasminum nudiflorum</i>	1	.50

PLANTING LIST, PLAN B.—Continued

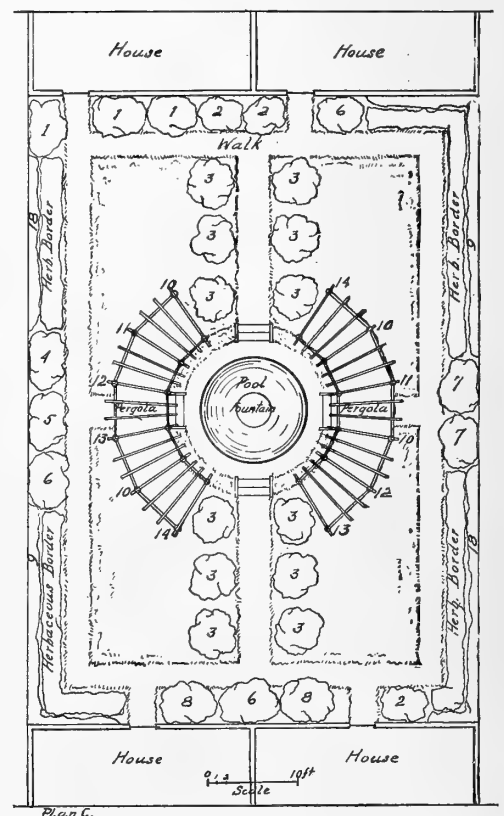
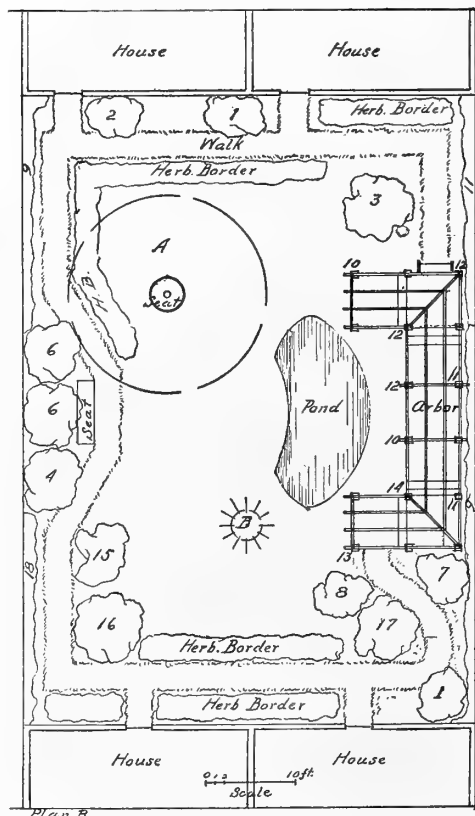
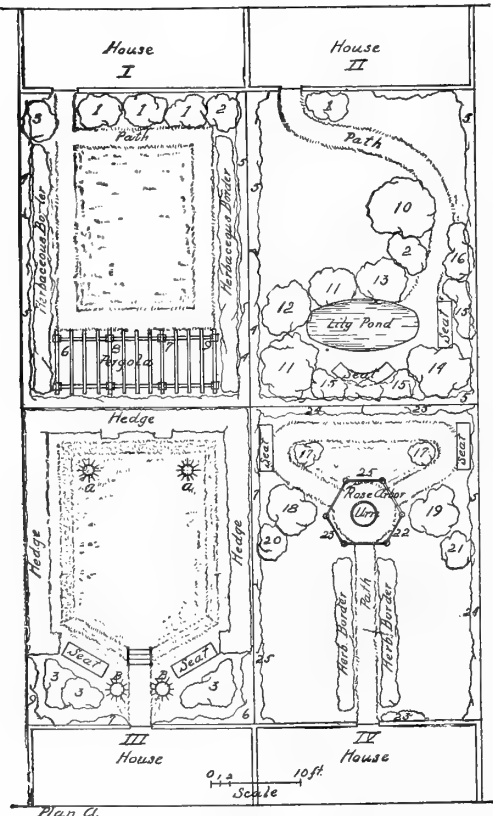
Key	Standard and Nursery Names.	No. of plants.	Cost
15	Japan privet <i>Ligustrum Ibot</i>	1	.75
16	Honeysuckle <i>Lonicera Morrowi</i>	1	.50
17	Snowball <i>Viburnum Opulus</i>	1	.50
18	Akebia <i>Akebia quinata</i>	1	.50
A	Napoleon's willow <i>Salix Babylonica</i> , var. <i>aurea</i>	1	1.00
B	Dwarf Norway spruce <i>Picea excelsa</i> , var. <i>conica</i>	1	2.00

Total number of plants and cost.....28 \$15.55
 Herbaceous borders, 30 varieties, 100 plants.... 10.00
 Water lily (pond) *Nymphaea Mariiacea*, var. *albida* 2 1.00
 Egyptian lotus *Nelumbo nucifera* 1 1.50
 Total cost.....\$28.05

PLANTING LIST, PLAN C.

1	Japanese barberry <i>Berberis Thunbergii</i>	3	\$1.05
2	Spiraea <i>Spiraea arguta</i>	3	1.50
3	Hydrangea <i>Hydrangea paniculata</i> , var. <i>grandiflora</i>	12	4.20
4	Lilac <i>Syringa villosa</i>	1	.50
5	Persian lilac <i>Syringa Persica</i>	1	.75
6	White lilac <i>Syringa vulgaris</i> , var. <i>alba grandiflora</i>	3	1.50
7	Rose of Sharon <i>Hibiscus Syriacus</i> , var. <i>Leopoldii</i> , fl. pl.	2	.70
8	Chinese peony <i>Paeonia officinalis</i> , var. <i>rosea</i>	2	1.50
9	Virginia creeper <i>Ampelopsis quinquefolia</i>	2	1.00
10	Wistaria <i>Wistaria Chinensis</i>	4	4.00
11	Actinidia <i>Actinidia arguta</i>	2	1.00
12	Frost grape <i>Vitis vulpina</i>	2	.70
13	Michigan rose <i>Rosa setigera</i> , var. <i>to-mentosa</i>	2	1.00
14	Prairie Rose <i>Rosa setigera</i> , var. <i>Queen of the Prairies</i>	2	1.00
18	Akebia <i>Akebia quinata</i>	3	1.50

Total number of plants and cost.....44 \$21.90
 Herbaceous borders, 30 varieties, 100 plants... 10.00
 Total cost.....\$31.90



Four plans for a 25 x 35 backyard. I. A central lawn with hardy borders and pergola. II. A water-lily pond hidden by shrubbery. III. A winter garden or outdoor nursery. IV. A formal rose garden

Plan B, showing how four neighbors may throw together their 25 x 35 backyards and create a little private park having plenty of lawn and flowers, an arbor and a little water-lily pond

Plan C, showing how the same neighbors may have a formal garden with a central fountain surrounded by a curving pergola. A suggestion for city people of wealth and taste



Quince trained bush form. If a borer girdles one stem others are left to bear. But it is better to grow quinces to one stem like apples, headed twelve inches high, and to keep borers out with knife and wire



Quinces trained tree form. This is better for most purposes than having the trees bush form. The head is low, so that spraying and other details of attention may be done with ease. These quinces are planted too thickly

Quality Quinces in the Back Yard—By S. W. Fletcher Michigan Agric. College

HOW THE OLD SCRUBBY BUSHES BY THE FENCE MAY BECOME BOTH PROFITABLE AND ORNAMENTAL SHRUBS—A LITTLE CARE WILL ENSURE A YIELD OF FRUIT TO GIVE QUINCE JELLY ALL WINTER

Photographs by the author, and the Horticultural Department of Cornell University

BECAUSE quinces cannot be eaten out of hand they are almost universally neglected in the home fruit garden. Nine times out of ten—and I am tempted to say ninety-nine times out of a hundred—the man who tills, fertilizes and sprays his apples, pears, peaches and plums will relegate his quince bushes to a dishonorable place by the sink drain, where they have to fight for an existence with wet soil, blight, curculio and bur-docks. Recently I took notes on over a hundred fruit gardens, and in ninety of these the quinces are in a wretched condition. They are starved, drowned, browsed, blighted, worm-eaten and borer-cursed. The popular notion that quinces do best when planted in some wet and weedy spot where no other fruit will thrive has been brought about by the general inclination to let them shift for themselves. The fact is, however, that a quince appreciates a well-drained site and good culture fully as much as its more popular relatives, the apple and the pear.

No one who has ever seen a well-groomed quince bush hanging full of beautiful yellow fruit—the golden apples of the Hesperides—will ever be satisfied with the indifferent crop of knotty, wormy, blight-spotted fruit that a majority of back-yard quince bushes produce. Do not be misled by the popular notion, born of indifference, that quinces thrive under neglect. Sometimes they thrive in spite of neglect, but never because of it. Even though one has only a half dozen bushes—enough to make many jars of delicious marmalade—it will pay to give these six plants a chance to do their best.

WELL-DRAINED SOIL BEST

In most of the one hundred fruit gardens that I visited the quinces were planted near the sink drain, or in the lowest, wettest and most undesirable part in the garden. Per-

haps this is justifiable and necessary in some cases, especially when the garden area is limited, since quinces are certainly not as valuable to the family as the more readily edible fruits. What I object to is the notion that quinces must necessarily be planted in wet, sour places—that they prefer this.

Without doubt quinces do best, in general, on a heavy clay loam, one that is heavier and that holds more moisture than would be best for apples, pears or plums, but this does not mean that the soil should be wet. It must be well drained, naturally or artificially, for best results. Quinces will often grow well on light soils, but they are not apt to be as long lived or as productive.

Quinces should be planted from ten to fifteen feet apart each way, depending upon

the strength of the soil. The common distance—six to eight feet—is not enough. Plants that are three years old are usually preferred for planting. It is a very simple matter to grow them at home. At any time between November and February take hardwood cuttings from the best quince bush that you can find anywhere. The cuttings may be from eight to fifteen inches long, and should be made only of wood of the last season's growth. Tie the cuttings in bunches, butt ends together, and bury them in moist sand or moss in the cellar. In the spring set them out of doors, twelve inches apart. At the end of two or three years they are ready for planting.

Another simple way of multiplying quinces is by mounding. Cut back an old bush so that it will send up many shoots from the roots. Heap soil around the base of these, six or more inches high. In a year roots will have been thrown out from the lower end of each shoot, then it may be separated from the mother plant and set out. The ends of quince branches may be bent down, covered with soil in the spring, and will be rooted by fall. Thrifty three-year-old quince plants should cost not over twenty cents each at a nursery. They usually begin to bear somewhat the second year after planting, and are in full bearing six to eight years later. If cared for properly quince bushes should bear well at least two score years.

HOW TO TRAIN AND PRUNE

At the time of planting the grower must decide whether it is better to train his quinces into trees or bushes. If he desires trees he will cut off the stem from ten to eighteen inches high, keeping all other shoots removed. Quinces may be headed higher, if necessary, even as high as three feet, but this gives trees that are too high for easy spraying, pruning



Ruined by leaf blight. The leaves are spotted and most of them have dropped, leaving half-grown and rotting fruits on the branches. Spraying prevents this



Orange (wrongly called Apple) quince. This variety is grown more than all other kinds together. It is one of the best for home use



Rea, a good variety of quince for growing in the home fruit garden. It is of earlier season than the Orange

and picking. Low heading is better, particularly because of convenience in spraying, for in most parts of the country a good crop of really first-class quinces cannot be raised without one or more sprayings.

If bush quinces are desired, several of the strongest of the many shoots that naturally spring from the roots are permitted to remain and to fruit, the weaker shoots being cut out. Bush quinces have one great advantage over tree quinces. If a borer ruins one of the stems, that one may be cut out and there will still be other stems to bear; but if borers girdle the stem of a tree quince the whole plant is ruined. On the other hand, it is my observation that low-tree quinces usually bear better fruit, if well cared for, than bush quinces. The borers must be persecuted anyway, so, in my opinion, the home fruit-grower had better grow quinces in the form of a low-headed tree.

The pruning of quinces should consist mainly of thinning out dead, diseased and

crowding branches, doing this each year if necessary, and always in winter or very early spring. Some people find it advantageous to head back the strongest shoots also, especially if the quinces are making a very vigorous growth, say of fourteen to twenty-four inches yearly. A third to a half of the last year's growth is cut off, as is often practised on peaches. This thins the fruit, since quinces are borne on the ends of the growth of the previous season. But annual heading-in tends to make the trees run to wood, and it may, if persisted in, defeat the very end for which it is practised. A safe rule is to head back occasionally, especially the strongest shoots that are growing out of bounds, but to confine the pruning mostly to the taking out of dead, blighted and crowding branches. If, however, the quinces have been neglected and are ragged and full of useless wood, or have been making an unsatisfactory growth, a sharp heading-in, coupled with fertilizing and tillage, may be just the sort of stimulus

they need. Saw the larger limbs close; paint all wounds over one-half inch wide, especially if they are in crotches.

TILLAGE SHOULD NOT BE NEGLECTED

I do not suppose that one quince in a thousand planted in this country has ever been tickled with a cultivator. There are very few commercial quince orchards of any size, and these, almost without exception, are as carefully tilled as an apple orchard should be. They would not be profitable otherwise. But very rare indeed is the quince tree in a home orchard that is not obliged to struggle with grass roots for a drink. Now and then hens make a dust bed beneath them, or hogs uproot the turf in search of hog dainties, but this is a make-shift sort of tillage. I do not know that I have ever seen over a dozen quinces mulched. For the most part they fight for an existence with sod, weeds, and perhaps the roots of an over-shadowing fruit tree. Stir the ground around the old quince



The scourge of fire blight. The brown withered leaves on two limbs below indicate that the disease is killing the limbs. Cut out blighted limbs



The branch on the left is dead, the leaves withered and the fruit shriveled by this disease. The branch on the right is healthy

bushes and see if they do not respond right joyously. The way they will grow and bear under careful tillage is a revelation to anyone who is familiar only with the sod-sick bushes in the back yard. Of course there are cases where quinces should be left in sod, as when the soil is very wet and when they are making a very thrifty growth in spite of the sod. But for the most part it will pay to till them. Till quinces as you would plums or apples, and for the same reasons. Remember, however, that quinces are shallow-rooted, and do not till them deeply. Plow shallow, and do not use a deep-working cultivator.

The fertilizing of quinces does not differ from the fertilizing of the other trees in the fruit garden. Good tillage will help wonderfully to keep the trees well fed. Supplement this with occasional dressings of muriate of potash and South Carolina rock or bone, or other standard fertilizers rich in potash and phosphoric acid. Old, unthrifty quinces, especially those in sod, may be rejuvenated with liberal dressings of barnyard manure. The guide in fertilizing, in every case, should be the condition of the trees and of the crop. Stunted, sickly trees need a tonic. Nitrogen is a plant tonic; it may be fed to best advantage in the form of barnyard manure, if that can be had; failing this, in a leguminous cover crop, and in nitrate of soda, dried blood, or other commercial fertilizers containing this plant food.

INSECTS AND DISEASES ATTACKING QUINCES

It is to be expected that orchard enemies will get a strong foothold on a fruit that is usually neglected. Years ago, when apples were neglected nearly as much as quinces are now, they, too, were over-run with pests. The average quince tree is a sorry sight. The leaves are riddled with blight. The fruit is disfigured by rust, blight, curculio and codling moth. Often it is nearly defoliated by midsummer, leaving the half-ripe fruits hanging on naked branches. Most of these difficulties can be overcome.

The fire blight, which is the same disease as sometimes works such havoc with pears, is perhaps the most serious of these troubles. It comes on at any time during the season, killing spurs, shoots, branches, and even the entire tree, within a few days or weeks. The bark shrivels, the leaves turn a dead brown all over and do not fall, thus distinguishing it from leaf blight, in which the leaves become spotted and eventually turn yellow and drop. The treatment is to cut out the blighted parts as soon as they are seen. Make the cut several inches below the lowest point to which the blight has spread. Do this work faithfully and you may control the blight, but in some seasons it is seemingly uncontrollable. See *Country Life in America* for May, 1905, for further suggestions.

Leaf blight is the disease that makes black spots on the leaves, and often defoliates the trees in August and early September. A healthy tree should hold its foliage till after the fruit is harvested. On the fruit it causes black spots which may run together and make a rotten place. Since it injures the leaves, the disease weakens the tree so that



Quinces attacked by rust. This disease breeds on cedar trees, which should not be allowed to grow near apples or quinces

it makes a poor growth and cannot carry out a satisfactory crop. Happily for us the disease yields very readily to treatment with Bordeaux mixture. Spray the trees after the blossoms have dropped and once or twice later, at intervals of from seven to fourteen days, depending on the weather. This very common disease, which is ruinous to quinces everywhere, can be so readily and cheaply controlled by spraying that the home grower cannot be excused for harboring it.

Quince rust is sometimes serious, but not nearly as much so as leaf blight. It blotches the fruit and sometimes covers it with a

fuzzy yellow growth. Spraying for leaf blight keeps it in check. Cut down all cedars near quinces or apples; this disease spends a part of its life in cedars.

The borer is more of a nuisance than most people imagine, because it does its work out of sight. Many a fine quince tree has suddenly sickened and died from the worm at its root, while the owner blamed the soil, the weather, and everything but himself. The only reliable way is to get down on hands and knees and dig them out with knife and wire. Vile-smelling washes are often recommended, but do not keep out all the borers. Go over the quince trees for borers when you hunt for them in apples and peaches—especially in May and September, but also at any other time of the year.

Two other insects, the curculio and the codling moth, sometimes reduce the quince crop. The former punctures the fruit, making it knotty. It is best handled by jarring the limbs every day or two for two or three weeks after blossoming, and catching the curculios on sheets, as is practised with plums. This is a tedious process, but it gives the results desired. The codling moth gets into quinces in the same way and produces the same result as it does in apples, but does less damage to quinces than to apples. Put one-half pound of paris green in the barrel of Bordeaux that is used on the quinces for blight immediately after the fruits have set, and this difficulty is met successfully. Paris green also helps to control the curculio, although I have met but one man who has been able to get rid of curculio with arsenites.



How most quince bushes look in late August and early September. Defoliated by leaf blight, the fruit blotched and knurly. This bush is having a struggle for life with burdock and rubbish back of the woodshed

Indoor Ferneries for Winter—By G. A. Woolson Vermont

HOW TO MAKE FERN GROTTOS AND WARDIAN CASES—SPECIES THAT WILL STAND THE RADIATOR HEAT OF OUR LIVING ROOMS, AND HOW TO SELECT THEM—WHY OTHERS FAIL

THE dry heat of our homes in winter is not at all favorable for the growth of native ferns, which by right should rest at least four or five months of the year. A few species, however, break the natural order of things and may be kept growing indoors with fairly good results.

The cheerful little polypody is always pleasant to look upon. It is astonishing how this rock-clinging species holds its own in any situation. It is especially at-



The dwarf sword fern (*Nephrolepis cordata*, var. *compacta*) takes up less room than the Boston fern and surpasses it in brilliancy of coloring, but is more delicate

tractive grown in birch-bark baskets accompanied by herb robert, with its happily contrasting foliage.

As an all-round fern the ebony spleenwort (*Asplenium platyneuron*) takes prominent rank. My plant was taken from the pine woods in July, and a year later had not materially changed. The only noticeable difference is the loss of one or two of the old fertile fronds and a profusion of new sterile ones clustering about the base.

THE SECRET OF SUCCESS

The secret of success in this indoor cultivation is the simulation of natural environment of the root growth. Thin bits of limestone or other rock must be placed against the fern roots, and moss and earth enough added to hold them in place. This is the one imperative demand of the ebony spleenwort. I have never taken up a specimen whose roots were not resting on or against or tucked under a stone of some sort. *Aspleniums* as a rule are limestone-loving ferns, but the ebony spleenwort is sometimes found on certain slate formations.

An unusually fine plant of the dainty maidenhair spleenwort (*Asplenium Trichomanes*) has been growing for years like an

ordinary potted plant. The natural habitat is much the same as that of the ebony spleenwort, but I have seen fine plants luxuriating in deep leaf mold, which accounts for the success of the specimen in question.

THE PREFERENCE OF THE WALKING FERN

The walking leaf (*Camptosorus rhizophyllus*) prefers a rocky foothold, but grows remarkably well indoors with an apology of mineral matter beneath its roots. It is an exceptionally interesting fern because of its unique habit of growth. Spores are not only wafted hither and thither by fitful winds, but the long, tapering fronds rooting at the apices throw up other progressive plants. This is the tramp of the fern family—the sole member of the group that literally walks a crack in the rock. The root growth of the walking leaf seems to be a matter of circumstance, for the species thrives equally well in the outdoor world, with much or little nether development.

For cultural purposes full-sized specimens growing in thin moss are to be avoided; they can be made to grow indoors or outside, but it saves time to select plants from earth-filled crevices or from thick sheets often found on the top or at the base of rocks.

The staying qualities of the fronds are unprecedented. I have in mind one remarkably fine specimen with adherent plantlets, all carefully taken up and properly placed on the platter with moss. New growth appeared, other fronds rooted at the apices, but the original fronds were in good condition for two years. A few weeks only of this time were spent in the cellar for enforced rest.

A FERN THAT WITHSTANDS THE RADIATOR HEAT

Strange as it may seem, the purple cliff brake (*Pellaea atropurpurea*), which often hangs from an almost invisible seam on the face of a perpendicular cliff, subjected to intense heat in summer and all the bitterness of a bleak New England winter, is a first-class fern for indoor winter culture. It is a rapid grower, flourishing but a few feet from a coal fire or radiator, in a north or south window. It quickly forgives neglect, and, if allowed to dry up out of doors or indoors, recovers when brought

into a moist atmosphere. It makes but one imperative demand, and that is the privilege of standing still. Over-zealous culturists usually like to turn things around, but revolving cliffs are not in the natural order of things. The slender black stipes are very susceptible to change of light, and warped and twisted fronds result.

All the above ferns hold their freshness under adverse circumstances, but rarely send out new growth until February.

In acclimating ferns taken indoors in late fall or early winter, avoid, as far as possible, a rapid transition from a cold atmosphere outside to over-heat inside. A gradual rise of temperature will insure the best results.

Screens are very useful in shutting off heat. An occasional showering keeps the foliage healthful. Over-watering is always disastrous.

Native ferns indoors are subject to the ordinary plant pests, chief of which are green aphids and slugs. Confined fumes of tobacco will answer for the one and whale-oil soap suds for the other



Where the dry, heated air of ordinary living rooms is injurious to the more delicate ferns they may be grown in a Wardian case. The dwarf sword fern, hart's tongue, bladder fern and brake are seen here



For indoor rockeries select a stone with natural pockets to receive the ferns. Use a platter as a base. The purple cliff brake, wall-rue, maidenhair, spleenwort and walking leaf—all limestone lovers—may be used. Also the hart's tongue and the common polypody

The bell glass is the resort of the majority of amateurs who would grow ferns under adverse conditions or with the least trouble.

Such glasses are obtained with comparative ease, but it is sometimes difficult to obtain a satisfactory base, as the use of the bell glass for a fern case is not usual and the conventional fern dish is not made with reference to glass covering of any sort. The old-fashioned soup plate is the only thing which has come within my reach that affords room for drainage and admits of an air space between the glass and filling.

The fundamental structure or ground plan must of necessity be somewhat regular, and should be composed of broken crocks or other porous matter, waste moss, soil and bits of rock as needed, held firmly in place by pegs and carpeted with mosses carefully "tacked" down. The species must be carefully selected, for filmy deciduous ferns easily "damp off" under glass, hence are of little use. Only hardy or half-hardy species can be counted on for lasting effects.

Although ferns will live on year in and year out under glass, they will surely die if permanently removed, as they have not stamina enough to withstand the drier air after living any length of time in confined humidity.

Bell-glass ferneries demand much less care than is required for open culture. Show-ering with a small rubber plant sprinkler once a week is usually sufficient. The air should be changed daily by leaving off the glass for a few minutes, that is, if the glass fits closely over the base, but as the glasses are not often perfectly true on the edges air enough may steal in. If perchance a glass should happen to fit too well it may be raised a trifle by inserting a match or a toothpick in the moss. No better environment for forcing the development of leaf buds or apple blossoms could be found, and the experiment is worth while, for heralds of the coming spring are always pleasant.

MAKING A REAL WARDIAN CASE

Perhaps after all the best appliance for properly keeping ferns in the dwelling house is the Wardian case—a sort of miniature greenhouse which can be made at home.

The dimensions must be regulated to fit

the space which the case is to fill. Extreme measurements taken from the base of the lower molding of the model before us are 25 x 20 x 17 inches; the two long panels, 24 x 16 inches, with ends 16 x 16 inches. The picture-frame order of architecture is here enforced, therefore the corner posts are not posts at all. The four frames are mitred together, half-inch splines being used on the corners only. A groove 1/2 x 1/2 inch is rabbeted out for the accommodation of the adjustable panels, which form the leading feature of this fern case. Anyone who has attempted a fernery where the entire case must be lifted off for filling or fixing will appreciate the convenience of panels which are easily removed. The glass is of heavy quality, each piece neatly framed, with half-inch stuff grooved an eighth of an inch to receive it. No putty is used in any part of the work. In case of breakage a couple of screws on one side of the frame can be taken out and new glass put in.

Brads secure the panels at the bottom, and pins made of bicycle spokes serve for the top; these slip through a slot into corresponding holes in the frames and the fern case is intact. For greater security small nickel plates at each end of the pan are screwed to the base of the end panels. By removing these screws the entire top can easily be lifted off.

The zinc-lined pan is provided with a faucet for drawing off superfluous water, thus preventing the disastrous water-logged condition from which ferns often suffer at the hands of the amateur.

Holes bored in the upper sides of the end panels will answer for ventilators, and the hinged covers can be raised at will when an extra supply of air is necessary. Here the physical needs of the ferns call for the same preparation as elsewhere for drainage—porous matter, sphagnum, leaf mold—after which come the ferns, wild flowers, lichens and mosses.

Rocks may be introduced, filled or otherwise; glades spanned by moss-grown logs are easily simulated.

Native ferns and exotics of heavy texture only grace our fern case. A fine specimen of the dwarf sword fern (*Nephrolepis cordata*, var. *compacta*) figures on the left. On the right a hart's tongue (*Phyllitis Scolopendrium*) is flanked by the bladder fern (*Filix bulbifera*), a variegated brake (*Pteris*) stretching its long fingers through the central hollow, giving the needed contrast in foliage. Deciduous ferns like the bladder and beech ferns have no staying qualities, as they easily damp off, but all the same they are worth growing, if only for a limited season.

The possessor of a roomy fern case with movable panels will find much pleasure in introducing flowering plants of the months as they come and go.

NATIVE FERNS THAT GROW INDOORS

The deciduous nature of many of our native ferns renders them valueless for indoor cultivation in winter. Nevertheless the genuine fern lover who gathers a wild garden outside his door is sure to take ferns inside, for the summer months at least.

A proper selection of native species for indoor cultivation can only be determined by experience. Many beautiful ferns fail to adapt themselves to a life indoors. Certain species are physically unable to stand the transition from the bracing atmosphere of the great outdoors to the dry air and dewless nights indoors, consequently they wither and die when other ferns flourish with tolerable grace.



Details of the ideal fern case shown on the opposite page. Every part detachable, contents easily reached, ample drainage provided. Shoots of shrubs may be forced into flower here in early spring



The holly fern (*Cyrtomium falcatum*) is the best indoor fern having glossy, dark green leaves. Easily grown in leaf mold. Water freely and give an annual rest

Partially developed plants will become distorted in the half light of shaded summer parlors, therefore it is better to wait for the fronds to assume a natural pose and gain strength enough to withstand disturbance before transplanting. Greater length of service is insured if fructification is not advanced.

Aside from the selection of serviceable species, discretion must be exercised in choosing plants to fit the place assigned; this is not difficult, as ferns in nature are cropping up in all sorts of places and growth is more or less governed by environment.

For a bracket plant a specimen with drooping fronds is much more graceful than one of an upright growth. A one-sided development is preferable for a corner situation. The more vase-like and perfect the development the better for a jardinière stand or centrepiece for a table of any kind. Ferns hanging over an old log or other obstruction, or swaying downward with roots anchored to the bank above, are often exactly the right shape for mantel decoration.

RECEPTACLES OF ALL DEGREES

The sort of receptacle in which to grow our ferns is a matter of taste. There is a long list to choose from between the ordinary punctured flower pot and the undrained silver fern dish. The more simple and unpretentious the better. Birch-bark baskets are especially adapted for small ferns. Good-sized jars and boxes may be pressed into service for ferns of larger growth, and, when glorified by a birch-bark cover, are really artistic. An attractive arrangement is a basket mounted on a tripod of white-birch saplings, the bark carefully selected in order to avoid cracks or flaws, for the presence of either means leakage.

THE PROBLEM OF DRAINAGE

House-grown ferns quickly resent imperfect drainage. Even ferns which grow in

swampy lowlands will not thrive in stagnant water or sour soil. Broken crocks or other porous matter will answer for drainage in a flower pot, but sphagnum or other waste moss should be freely used in other "containers" to take up superfluous water which cannot be drained out. Glass fern dishes are preferable to all others, because such dishes lined with a sheet of moss over an inch of pebbles are most artistic. The moss keeps the soil inside from working down, and the pebbles quickly show an overflow of water, which may be drained off. It is well to have the sheet of moss large enough to turn over and pin down over the fern roots; this gives a neat finish and prevents too rapid evaporation.

A most effective finish for the fern dish is the so-called "gray moss," or even a fluted gray lichen. The stiff growth becomes pliable when wet and is then easily adjusted. Just enough should be broken away to allow the fronds to push through without damaging



A stone like this is a good foundation for an indoor rockery. Make a base of cement to keep the stone firm

the tender crosiers. This combination of green and gray is very lovely.

In a large jar for ferns fully a third of the contents should consist of broken porous material with several inches of moss above. Light soil only should be used; often enough is taken up with ferns to sustain life indoors for months.

Tin boxes can be made to fit any desired space, a strip of birch bark fastened around converting plebian material into something artistic. Anything of this sort should be painted inside to prevent rusting, and birch-bark baskets are more desirable if lined with tea lead.

Another pretty device for holding potted ferns of generous growth may be made of a packing-box covered with bark and mounted on a rustic standard of the sawhorse style of construction. Such an arrangement is decorative indoors or out, and serves a double purpose if placed on a veranda just outside of a window.

The limited list of summer ferns for use indoors is nearly all of the dryopteris family. *Dryopteris spinulosa*, var. *intermedia* is by far the most satisfactory. It is a beautiful fern of good texture; it is easily uprooted, rarely wilts, and will thrive anywhere if given decent treatment. It excels all other species in its indifference to change of light. It is no small feat to get a good large plant unbroken out of a tangled mass of underbrush. There is but one way, to truck the roots under one's arm, holding the fronds back with the elbow, and then go ahead. I have thus secured many superb plants in perfect condition for indoor decoration.

The type shield fern (*D. spinulosa*) is also of service. It usually grows more in the open than either of its varieties, hence requires a well-lighted room in order to hold its own. The spreading shield fern (*D. spinulosa*, var. *dilatata*) is big and plummy, beautiful in the right place. The marginal shield fern (*D. marginalis*) is of a rich blue-green color, good for contrasting effects; it bleaches quickly in shaded rooms, but holds its green color for many months in stronger light.

The Christmas fern (*Polystichum acrostichoides*) is especially effective potted with the maidenhair or the hardy shield fern. A long, drooping specimen sweeping the air from the top of a bookcase or other elevation is very striking. The endurance of this fern depends largely upon whether the roots were disturbed in transplanting and on the advance of fructification. I never knew a matured specimen with heavily fruited tips to be of much service indoors, but sterile plants often keep in fair condition six or eight months.

THE MAIDENHAIR FOR SECOND CHOICE

The native maidenhair (*Adiantum pedatum*) is second only to the hardy shield fern (*D. spinulosa*, var. *intermedia*), and is to many eyes more beautiful. No comparison however should be made, as they are of distinct types.



Cover the base with moss and plant hardy ferns like the purple cliff brake and your rockery is complete



The most double of all the white water-lilies (*Nymphaea Richardsoni*). It does best in about three feet of water. The flowers are not odorous



The sweet-scented water-lily has good garden varieties or hybrids. *Nymphaea Luciana* here shown is rosy pink and twice as large as the common white ones

The Hardy Water-Lilies Worth Growing—By Henry S. Conard Baltimore, Md.

NUMBER VI OF THE "LITTLE MONOGRAPHS" OF GARDEN GENERA—A SERIES OF ARTICLES SUPPOSED TO BE JUICIER AND RATHER MORE ACCURATE THAN THE OLD-STYLE BLOODLESS BOTANY

A POND of water-lilies is a possibility for anyone who can give *two square feet* of water surface in a sunny spot.

If you do make a water garden have it near at hand so you can see the flowers when at their best, and with all hardy water-lilies we must count on enjoying them in the morning or early afternoon. The flowers close at specific times for each kind, varying from noon to four or, at least, five o'clock.

A GARDEN IN A TUB

Water-lilies in tubs are better than nothing at all. A kerosene barrel sawed in half will furnish two tubs, each big enough for one plant. The tubs should be well washed out and soaked for some time in water, in order to remove as much as possible of the oil and the glue which is put on to render the vessel tight. Three or four days to a week will suffice for this.

It will be better, though not essential, to have the tub sunk about half its depth in the earth, so as to keep the roots cool. For though the leaves and flowers love sunshine, the black ooze in which the roots naturally live is always cool.

MAKING THE COMPOST

Fill the tub half or two-thirds with a mixture of equal parts good garden soil and well-rotted cow manure. When setting out the plant spread out the roots well, and after filling in the soil cover with an inch of sand. Fill up the tub with water and our little water-lily pond is complete. The addition of a little water every day or two, to replace what is lost by evaporation, is all the further attention that will be needed until winter sets in.

If old cow manure is not available use ground bone—a small double handful is enough for such a tub as is described. The sand for covering is not a necessity, but it serves to keep in place the earth and manure.

One caution—do not use mud or swamp muck in the water garden.

If I am to choose one water-lily only for such a small effort, I will take the little

Chinese pigmy water-lily, *Nymphaea tetragona*. It is the most satisfactory, because it will quickly cover the water with its small horseshoe-shaped leaves. These are dark green, with faint and picturesque brown blotches on the upper surface, dull red beneath, and the combination is rich in color. Then again, it is a good plant for flowering—a good specimen will keep up a continuous succession of its little star-like flowers throughout the season, from June to September. Often two or three flowers will be open at once. The eight or ten snowy petals surround a group of stout golden stamens, and in the centre is a broad, yellow, basin-shaped stigma. The flower opens each day about noon and closes again at five in the afternoon, repeating this on three or four successive days. It exhales a delicate fragrance, like that of a tea rose.

If a change from the pure white is wanted we may choose one of the smaller hybrids of the pigmy water-lily. For bright yellow take the yellow pigmy (*Nymphaea tetragona*, var. *helvola*), similar in size and in habit of

growth, but the flower is bright yellow and the leaves are very heavily blotched with distinct reddish-brown patches. It gets these characteristics from the native Mexican water-lily (*N. Mexicana*), which is found in Florida, Texas and Mexico. This is a very peculiar species, scarcely hardy as far north as Philadelphia, and certainly cannot be classed as a hardy garden plant. For, though it will exist in water of a depth of three feet, it will not bloom if left continuously out of doors. It is a shy bloomer even at its best.

For those who prefer pink there is the Laydeker's pink pigmy (*Nymphaea Laydekeri*, var. *rosea*), another hybrid of the Chinese water-lily. It resembles its Chinese parent in size, habit and character of leaf. The flowers, however, which are produced in great numbers, are more cup-shaped. When the flower first opens the petals are of a delicate shell pink. On subsequent days the inner petals change to rose, and finally to a deep carmine rose color, with two or three flowers of different ages open at once.

These three pigmy varieties are neat enough in all surety, but will only be chosen for a small tank or a Japanese garden, where everything is done on a miniature scale.

FOR GARDENS OF FOUR FEET SQUARE

In the next sized garden, where four feet square or perhaps more can be given to a plant, a very wide choice presents itself. We may now have white, yellow, pink, orange or deep-red flowers, and, whereas the very small gardens we have to be content with flowers about two inches, we will now be able to grow some six or eight inches across. And we can use the half barrels, sunk bodily in the tank or pond, for tubs in which to set the plants. Still better will it be to have tubs three to six feet in diameter for the plants, and set three stocks of a kind in each tub. This insures a continuity of bloom.

For the smaller spaces, of say two to four feet square, Marliac's yellow (*Nymphaea Marliacea*, var. *chromatella*), the *N. Laydekeri*



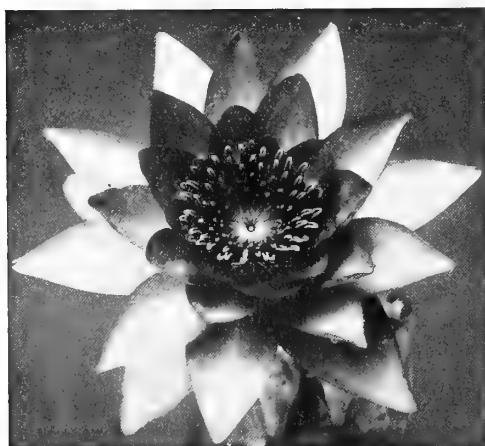
An artistic water garden. Notice the grassy margin, instead of concrete; the flowing, graceful outline, instead of the unnatural circle or square; and the interesting hardy plants in the border, instead of the everlasting canna, castor oil and ageratum

varieties and *N. exquisita* will do well. But the great majority will not do their best on a water surface less than four feet square.

The first named (*chromatella*) is decidedly the hardiest and most satisfactory of all the garden water-lilies. It is also one of the oldest, dating from about 1888. The flower is bright yellow, and on its first day sits like a golden cup on the water. It has other very decided claims to favor: A single stock will give a continuous bloom from the first of June until frost, and often there will be two flowers open at once. The leaves usually float on the water, and are beautifully mottled with reddish brown. But in shallow water, or when crowded, both leaves and flowers rise several inches into the free air and grow with a look of rank luxuriance. The plant increases rapidly in favorable circumstances, so that the possessor of a single shoot will soon be able to supply his neighbors. It is perfectly hardy, even in water so shallow that it must certainly freeze to the bottom. The fragrant yellow water-lily (*N. odorata*, var. *sulphurea*) is more delicate, and is easily distinguished when out of flower because the blotched leaves are always floating. The flower is composed of slender spreading petals. Its chief interest lies in the fact that it is the offspring of two native species (*N. odorata* and *N. Mexicana*).

SOME REALLY GOOD WHITE HYBRIDS

Among whites none of the wild species is sufficiently free-flowering to win a place in a small collection. We have, however, some superb varieties. I think *N. Gladstoniana* is the best of these. It is thoroughly hardy and a stronger grower. The leaves are of a rich green color, and may reach ten or twelve inches across. Of the flower what shall I say? Its many snowy petals stand out in all directions, making an airy sphere of glistening whiteness six or eight inches in diameter. The flower opens early in the morning and does not close until two or three o'clock in the afternoon, and often reappears on four successive days. The plant will give a goodly number also from a single shoot in a season, though there must be three or four shoots to insure continuous bloom. The only quality that this water-lily lacks is a sweet scent.



N. Robinsont, one of the yellow-red flowered group. The flowers of this float on the water



James Brydon has a gorgeous garnet-red flower. Notice the open centre. A young flower

Similar to this in its flower is the white Marliac lily (*N. Marliacea*, var. *albida*), a very rank grower, which often raises its dark-green leaves and flowers well above the water.

A GROUP OF REDS AND ROSES

There are two red-flower Marliac lilies of identical habit with the preceding, but one (*N. M.*, var. *carnea*) has light, pearly, pink flowers, the other (*N. M.*, var. *rosea*) is deep rose. None of the three can be said to bloom freely. *N. Wm. Doogue* resembles *N. M.*, var. *carnea*, but has larger flowers, sometimes six inches across, and rather more of them. It is of American origin, while all the *Marliacea* and *Laydekeri* varieties are French and take their group names from their raisers.

THE CAPE COD WATER-LILY

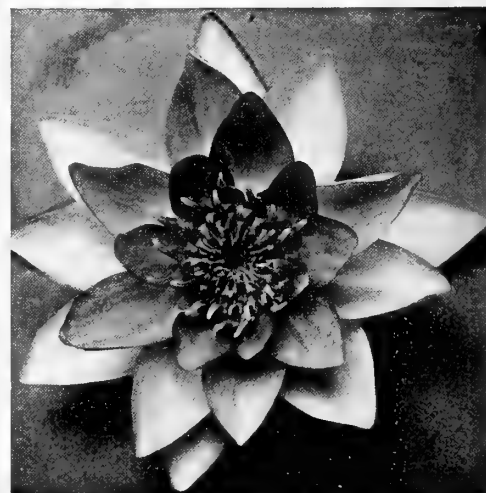
The flowers have the slender, graceful petals of the common white pond-lily and the delicious scent of that species, but are of a beautiful rose pink color. As in the type species the flowers open about six A. M. or earlier and close about noon, but this variety has the peculiarity of keeping its sepals continuously open. The closed flower therefore forms an ovate mass of pink, standing on a four-rayed star of dull white. It is a shy bloomer, and must be raised in considerable numbers to give a good effect. It is impatient of the summer heat of Philadelphia, but does well in its chief habitat, Cape Cod. One of the Marliac group, called *N. exquisita*, is a more vigorous and more floriferous variety.

THE DEEP RED WATER-LILIES

The flowers of the deep red varieties are more or less cup-shaped, i. e., the petals are erect and concave. From a pale pink on the outermost petals the color deepens toward the centre of the flower to a deep crimson. The stamens are crimson or deep orange red on the outer face, with bright orange or yellow anther cells. In full sunshine the effect is rich and striking. The plants are strong growers for the most part, but slow to propagate. They produce a

fine circle of large round leaves and a goodly number of their magnificent blooms, which often reach five or six inches across. The splendid coloring of this group is derived from the Swedish water-lily (*N. alba*, var. *rubra*), which is very hard to tame. It has been grown with tolerable success in northern New York and in Massachusetts, but is not to be recommended. *N. sanguinea* has flowers of rosy, purple-spotted carmine; *Laydekeri purpurata* is rosy crimson with orange-red stamens; *Wm. Falconer*, bright garnet and as much as seven inches across, perhaps the most gorgeous of the lot; *James Gurney*, smaller and dark rose, and *James Brydon* are among the best known of these.

A distinct and beautiful series of varieties in which red and yellow are blended has been produced by combining the Swedish water-lily with our native yellow water-lily (*N. Mexicana*). The effect of the deep red in the centre of the flower with pale yellow on the outer petals is extremely striking. The brown blotching of the leaves which is seen in most of these red-yellow water-lilies is inherited from the American parent. For small gardens or where one does not want to get off with a minimum of labor these are ideal plants. They do not spread rapidly but maintain a single strong shoot, from which an ample supply of leaves and flowers arises. *N. Robinsont* and *N. Seignoretii* are the oldest and best known of this group. The former bears a peculiar "ear-mark," by which it may always be recognized. As in all the nymphæas, the leaf is round, and attached to the petiole near the centre. On the basal side a deep cleft divides the leaf from the margin, nearly or quite to the petiole. The borders of this cleft are very constantly smooth and entire. But in *N. Robinsont* there is a peculiar crimped notch on each side, midway of the cleft; it also has floating flowers, whereas those of its companion stand six inches above the water. The bright combination of yellow, orange and red which characterizes the flowers of this group is suggested by the name of one of the most recent members, *N. Aurora*, the flowers of which, opening with a yellowish color, get redder and redder as they age.



The flower of *N. Aurora* opens yellow and gradually becomes redder as it ages. An old flower

If you have a large pond there will be room for the less floriferous varieties. The common pond-lily (*N. odorata*), unequalled for sweetness, may be planted. Words cannot picture a large bed of this in full bloom. It is one of those things that one must see to know its beauty and charm. The northern *N. tuberosa* is a more rampant grower, and indeed it will take complete possession of the pond if not opposed. Its flowers are large, pure white, but scentless and few in number. Ample space will also make it well worth while to plant *N. odorata*, var. *rosea*, the pink Cape Cod variety. The fact that it makes few flowers to a shoot is lost sight of in a large bed. In the shallows *N. odorata*, var. *minor* will do well. It is a diminutive odorata, which can get on fairly well even if the water completely dries away from around it.

TWO EXCELLENT KINDS FOR DEEP WATER

Those hitherto mentioned will as a rule give best results in water having a depth of from one to two feet above the root-stocks. *N. odorata* and *N. tuberosa* it is true will stand three or four feet. But for depths of two to five feet *N. alba*, var. *candidissima* is to be recommended. Large plants of this will make a wide spread of 10-inch leaves, and will produce splendid white flowers from the first of June until frost. This is one of the earliest bloomers in spring. It is exceedingly strong and hardy.

For depths of water up to eight or ten feet the giant Southern pond-lily (*N. odorata*, var. *gigantea*) is best. It is little more than a large odorata. The leaves reach a foot or more in diameter, the flowers four or five inches.

HANDLING CUT FLOWERS

Water-lilies do well as cut flowers if they are properly handled. The flower selected for cutting must be newly opened. In nature the life of each bloom is limited to three or four days, but in the house it may keep a day or two longer. Occasionally death seems

to overtake the motor centres while the flower is still open, and then it remains several days before the petals wither. The new flower may be recognized by these features: (1) The stamens spread apart at the centre of the flower, leaving a free passage down to the stigma; (2) the anthers are plump and round and have not yet begun to shed any pollen; (3) the basin-like stigma is filled with liquid excreted from its surface.

The flower stalk is scarcely able to supply the petals with water; the cut flower should be floated in a dish or, if placed in a vase, the vase should be full to the brim with water, the flower projecting as little as possible. When carried from the sunny garden into the house the flower is likely to close, on account of the diminished light, but it will open again next morning as well as if it were outside.

More than sixty named varieties of nymphæa have been placed on the market. Many of them are so much alike that only the professional can distinguish them, and even he must often depend on the label for certainty. The following table will aid in identifying any of the hardy kinds.

KEY TO THE HARDY WATER-LILIES

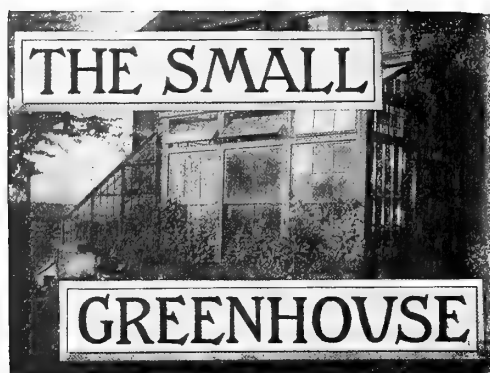
- Flowers yellow.
 - Opening 11 to 12 A. M.
 - Spreading by runners..... *N. Mexicana*
 - Without runners..... *N. tetragona*, var. *helvola*
 - Opening from 7 to 8 A. M.
 - Petals broad, concave; flower cup-shaped,
 - N. Marliacea*, var. *chromatella*
 - Petals narrow, spreading..... *N. odorata*, var. *sulphurea* and *N. sulphurea*, var. *grandiflora*
- Flowers pure white.
 - Leaves ovate, small..... *N. tetragona*
 - Leaves circular.
 - Strongly sweet-scented.
 - Flowers 2-5 in. across; lvs. 4-8 in..... *N. odorata*
 - Flowers 1-3 in. across; lvs. 3-5 in. . . . *N. o.*, var. *minor*
 - Flowers 3-6 in. across; lvs. 8-12 in. . . . *N. o.*, var. *gigantea*
 - Odorless or nearly so.
 - Petiole marked with longitudinal brown stripes,
 - N. tuberosa*
 - Flowers very double. *N. t.*, var. *Richardsonii*
 - Petiole uniformly colored.
 - Sepals rounded to the receptacle.
 - Always sterile.
 - Flowers and leaves rising from the water,
 - N. Marliacea*, var. *albida*

- Flowers and leaves floating,
 - N. alba*, var. *candidissima*
- Fertile.
 - Petals spreading in all directions,
 - N. Gladstoniana*
 - Flower more cup-shaped..... *N. alba*
 - Very double..... *N. a.*, var. *plenissima*
 - Very large..... *N. a.*, var. *maxima*
- Sepals joining the receptacle by a sharp angle,
 - N. candida*
- Flowers red or pink.
 - Flowers small, pink, opening about 11 A. M.
 - Plant a single crown without offshoots,
 - N. Laydekeri*, var. *rosea*
 - Plant with many side shoots,
 - N. Laydekeri*, var. *prolifera*
- Flowers 3-7 inches across.
 - Petals all alike in color—pink.
 - Leaves deep red beneath. *N. odorata*, var. *rosea*; *N. exquisita*; *N. rosacea*
 - Leaves pink or green beneath..... *N. Caroliniana*; *N. odorata*, var. *Luciana*; *N. tuberosa*, var. *rosea*; *N. t.*, var. *superba*
 - Outer petals whitish, shading to pink or red at centre of flower.
 - Plants very robust; fls. and lvs. rising above water.
 - Flowers soft flesh pink..... *N. Marliacea*, var. *carnea*; *N. Wm. Doogue*
 - Flowers deep rose color. *N. Marliacea*, var. *rosea*
 - Less robust; fls. floating, deep red at centre.
 - Leaves blotched with brown.
 - Flowers rosy lilac. *N. Laydekeri*, var. *lilacea*
 - Flowers deep red.
 - Sepals and petals in fives..... *N. gloriosa*
 - Sepals and petals in fours.
 - Stamens deep orange.
 - N. Marliacea*, var. *flammea*
 - Stamens cardinal... *N. Marliacea*, var. *ignea*
 - Leaves dark green.
 - Fertile.
 - Inner petals bright red. *N. alba*, var. *rubra*
 - Inner petals deep carmine... *N. Froebelii*
 - Sterile hybrids.
 - Flowers opening in early morning. *N. Wm. Falconer*; *N. James Gurney*; *N. James Brydon*
 - Flowers opening after 9 A. M. *N. Ellisiana*; *N. sanguinea*; *N. Marliacea*, var. *rubro punctata*; *N. Laydekeri*, var. *purpurea*
 - Outer petals yellowish, shading to red at centre of flower
 - Leaf with a notch on border of sinus. *N. Robinsoni*
 - Sinus entire. *N. Seignoreti*; *N. aurora*; *N. fulva*; *N. Andreana*; *N. lucida*; *N. Laydekeri fulgens*; *N. chrysantha*; *N. Arethusia*; *N. Arc-en-ciel*



This is one of two red French hybrid water-lilies, rank-growing plants, often raising both leaves and flowers above the water. (*N. Marliacea*, var. *rosea*)

The best of all the water-lilies for deep ponds is *N. alba*, var. *candidissima*. One of the early bloomers, and it flowers from June to frost



Twelve-Ounce Peaches Grown Under Glass

THERE is a special satisfaction in growing peaches under glass if you have the facilities. They come in before those outdoors and are unequalled for lusciousness. Of course they need a little heat in winter, but only a little.

The tree from which I picked the peaches shown in the accompanying photograph has been in its present situation for four years, being two years old when planted. It carried over 300 peaches this season. The variety is Lady Palmerston, English, I believe, in origin. It is trained to a trellis in the greenhouse and covers a space of about 170 square feet. We consider peaches one of the most satisfactory crops to grow in a greenhouse. With average care in the keeping of the tree clean and ripening the



Peaches weighing 11 3/4 and 12 ounces. Six trees in the greenhouse keep fruit "in season" from June 8th till late in September. Fancy 300 peaches on a single six-year old tree!

wood properly in the fall, a good crop can be depended on year after year. Very little fire heat is necessary, as frost won't injure the trees through the winter. Unless the fruit is wanted very early the trees need not be started into growth before the first of March, and then a night temperature of 40° to 45° is high enough. The house, in which this tree is growing with five others, was started March 1st, and we pulled the first fruit on June 8th.

The trees we cultivate are so arranged that a supply is kept up from that time to the middle of September. The first to come in is Hale's Early; the others, that follow in succession, are Royal George, Alexandria

Noblesse, Princess of Wales, Sea Eagle and Lady Palmerston, the latter ripening its first fruits about the 6th of September. Most of the trees will maintain a supply from fourteen to eighteen days, so that there is very little break in the supply of peaches from the time the first fruits are pulled early in June until the last are gathered from the fifteenth to twentieth of September.

New York.

WM. SCOTT.

Sow Vegetables Now for February and March Eating

THE big advantage the man with a small greenhouse has over a gardener who has only hotbeds looms up in January. You are almost sure to catch cold if you run out bareheaded in January or February to adjust the ventilators.

Moreover, you can control conditions so much better that you can raise fresh vegetables for use in February and March in less time and with more certainty than you can in hotbeds. The most practical things for this purpose are lettuce, radishes and spinach, but you ought to have the other easy, short-season crops, to wit, watercress, spearmint, and mustard (how Englishmen adore these greens), all of which you can eat in February. You can have in March beans, beets and garden cress.

Of course there is no excuse for not having parsley all the year round. A patch three feet square is enough for a family of four.

And why not try a crop of mushrooms under the benches, even if January is a little late? For you it is a by-product, because you have to supply heat and care anyhow. If you get a crop that lasts through February and March, you can treat your neighbor who has only hotbeds. If not, all right—it has cost you nothing but the spawn.

The Southerner's Reminder

IN the latitude of Richmond the great item is the preparation of hotbeds. Sow in hotbeds lettuce and radishes for use in February; beets for March; early cabbage, cauliflower and onions for April.

Start in a hotbed pansies and other flower seeds which you want to bloom a month earlier than if sown outdoors. The young plants may be set out early in April, and will bloom in May.

Cut saplings for bean poles and brush for peas.

In the latitude of New Orleans the planting season is at its height.

Set out every kind of fruit tree and plant. Make cuttings of LeConte pears, Marianna plums, pomegranates, and Scuppernong or other Southern grapes. Dig borers out of peach trees.

Sow all hardy vegetables outdoors and start in a hotbed the tender ones, e. g., tomatoes, eggplants and peppers.

Plant roses and other bushes and sow all annuals and perennial flowers.

Dig up, divide and replant such perennials as are not hardy North, e. g., cannas, caladiums and verbenas.



Other Garden Problems That Need Solving

IN THE November number we mentioned twenty problems like that of fringed gentian culture which would make delightful studies for amateurs. Here are some more. We offer \$5.00 for the best answer to any of these questions. For conditions, see the November number.

21. How to get rid of chickweed that is ruining a lawn.

22. How can we get a good white lily for the million; one that will not be capricious, like *L. candidum*, and will be hardier than *L. longiflorum*?

23. What device for growing house plants, costing \$10 or less, can a renter have which will avoid the chills and draughts of the window sill, dirty water on the carpet, the moving of heavy objects, and the excessive heat and dryness of the ordinary living room?

24. What kind of flowers has given you a continuous sheet of bloom—not scattering blossoms—for the longest possible period, say three months, and how did you get the results?

25. How can we keep up a big yield of sweet peas right through the dog days in spite of red spider, and without spending an unreasonable amount of time in picking pods?

26. Can you prove that any important plants are lime lovers, and that others are lime haters?

27. Who can show the best record of rhododendrons or laurel raised from seed? (Amateurs only.)

28. How can you cure or prevent the China aster disease?

29. Can you devise a simple little floral clock of garden flowers which will not cost more than \$50?

30. Who can show the greatest improvement in our native asters?

31. In hepaticas?

32. Who grows perfectly healthy hollyhocks without spraying in a neighborhood where the disease exists?

33. How can we get larger and more perfect flowers of golden glow without staking the plants?

34. Who can discover a sure and simple way of growing the largest of all poppies—*Romneya Coulteri*?

35. Who can report the best success in the North with Southern Allegheny plants e. g., galax, leucothoe, *Rhododendron Catawbiense*, *Azalea Vaseyi*, etc.?

YOU NEED THIS CATALOGUE IF YOU HAVE FIFTY SQUARE FEET OR FIFTY ACRES TO BEAUTIFY

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It is to your profit to deal with us. Take advantage of our "Special Information Department." It saves thousands of dollars for planters by advising how to arrange their gardens and grounds in a most artistic and least expensive manner. No other establishment has one so well organized. Send 10 cents in postage. We will then place your name on our mailing list and forward our catalogue, and the useful and interesting booklets, folders, circulars, special offers, etc., issued from time to time. You may then receive the full benefit of our Special Information Department, services of which you will find valuable. Tell us all about your property, sending photographs or a rough plan if possible.

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One of our very rare Chinese Trees—hardy. Photographed November 1st, 1905—notice its perfect foliage, which shows bright and glossy-green long after most trees have lost their leaves.

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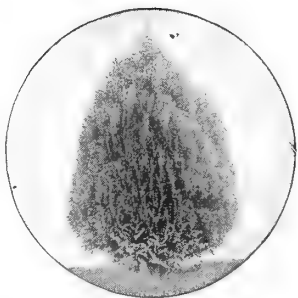
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Big Crops on Old Currant Bushes After Years of Neglect

SEVERAL years ago, when we began the recovery of an abandoned home in New Hampshire, we found among other unexpected assets buried in grass and weeds a row of four currant bushes, or rather a disreputable lot of black, knotty sticks, not over eighteen inches high, of unnumbered years.

When the turf was removed, and the earth dug over for a space of two feet on either side



These old currant bushes which had not borne for years bore a good crop the first year after a little pruning and fertilizing in the fall

of them, and the dead wood cut out, the few living twigs with scanty foliage looked even more unpromising than when in their knee-high tangle. That summer the entire yield from four bushes was a pint of fruit. As I had never owned a currant bush before, I was grateful for this small favor, though I forgot to count it among my blessings.

Further pruning was given the row in the autumn, and it was then covered with a foot of manure. The following spring a part of the dressing was dug in about the roots with the spading fork, for our soil is naturally thin and gravelly even for New Hampshire, and more was added. This served the double purpose of mulch and fertilizer through the summer and protection to the roots in the winter. The second summer the yield was two and a half quarts of fair-sized currants. This treatment of removing the old wood and fertilizing every autumn has gone on for ten years, and such a row of currant bushes as we now have would be hard to match. Some of the bearing stalks are fifty-eight inches high, and a single bush yielded this summer a peck of currants of superior size and flavor. Meantime two new bushes had been added, and the row, now numbering six, bore over a bushel of fruit.

The enemy of the currant bush is the currant worm, which appears quite unexpectedly when the bushes are in full leaf, and, if neglected, will destroy the greater part of the foliage in a single day. A safe and sure

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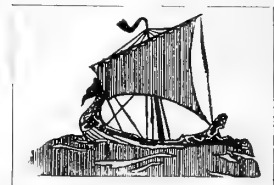
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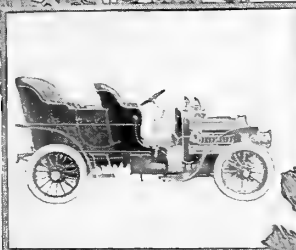
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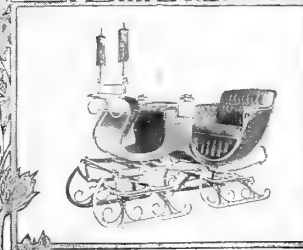
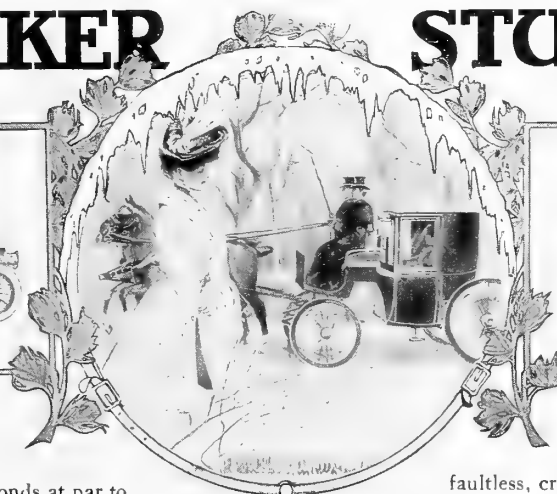
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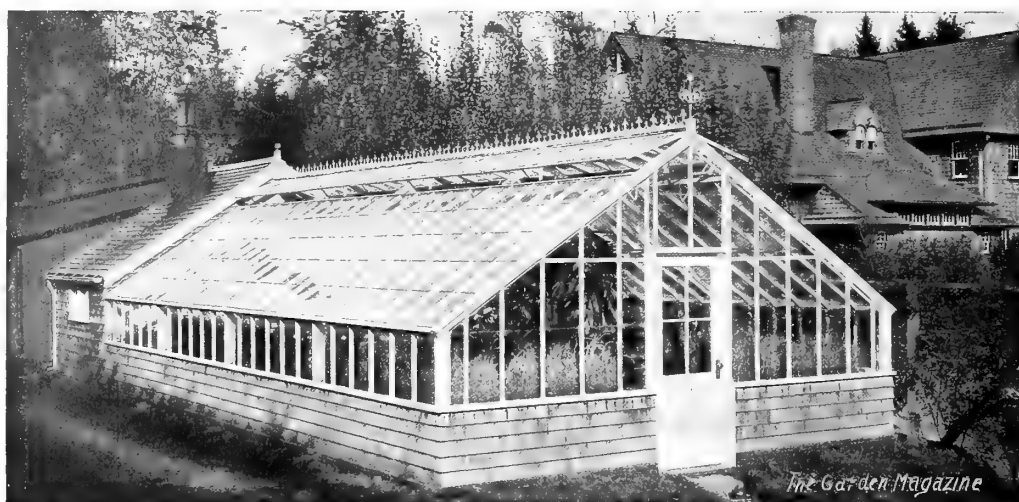
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CUCUMBERS IN MARCH

The garden at its best is only four months of possibilities—the greenhouse is an all year round proposition. You spend endless effort and money in the four garden months, while the remaining eight are dreary wastes. In truth the greenhouse simply multiplies the garden's possibilities, giving you tomato, cauliflower, egg plants, celery plants, etc., of the choicest, stockiest growth, with a goodly start ready to plant out early in the spring. These plants have twice the vigor of the usual market ones and come to fruit a full two or three weeks before the others.

Tomatoes planted in the greenhouse now, will yield delicious delicately flavored fruit in March, when prices of Southern grown are away up and quality is away down. Along with tomatoes come beans, beets, melons, and that crispy, appetizing delicacy, the much maligned cucumber. Of course lettuce, spinach, parsley, radishes and cress you can always count on having in the greenhouse. So much for vegetables, and nothing said about the violets, roses, carnations, azaleas, Easter lilies, and so on through the endless flower possibilities adding the beautiful to the practical side of owning your own greenhouse.

A lean-to house at \$500.00; one with a single apartment and potting shed like the illustration; then the two-compartment house for growing plants requiring different temperatures: three kinds of houses we would like to send you information about. Write for collection of cuts—U-A.



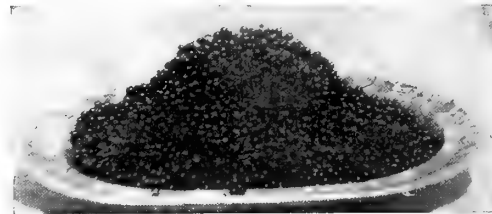
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remedy to use is one-half teaspoonful of paris green well mixed in a quart of flour. This dusted over the bushes wherever the worms are at work will destroy them at once.



The crop from one bush after the first year was one peck of luscious berries. Is it not worth the trouble?

However, it is well to keep close watch and repeat the dose if necessary, for the chances are that some will be overlooked. As the worms appear while the bushes are in flower, all trace of the poison is washed off by rains before the fruit is ready to gather.

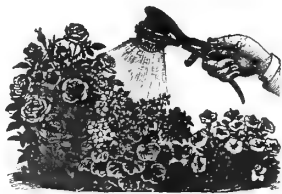
New Hampshire. HELEN R. ALBEE.

Corn Transplanted When Twenty Inches High

ON June 14th we transplanted some corn from sowings made May 8th and May 20th. This was done more to thin the rows and get it out of the way than with any hope of satisfactory results. Although nearly



These corn plants were saved when thinning-out time came and replanted in the garden when twenty inches high. They bore good crops of ears



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For spraying plants indoors and out, the LENOX IMPROVED SPRAYER is the most serviceable for the house and garden. House plants generally suffer from lack of moisture, such as rain or the morning dew give them. This produces a misty shower that supplies the plant most naturally and completely, as absolutely necessary to real success with house plants.



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Spraying for insects and dust, it reaches every part of the plant over and under the leaves, where insects breed. Spraying with tobacco water will surely kill these enemies. Had we the space, we could tell you many things about your plants, how essential it is to spray them while in the house, on the under side of the leaves.

How much Mother would like one, for her plants!

Sent complete, with a cake of tobacco soap free. Make a suds and spray. Your plants will surprise you.

THE LENOX MFG. CO., 1292 Broadway, New York

50 cts. Post-paid

two feet tall, when set out it flourished amazingly and yielded a better crop than any one of four other plantings, giving us over a hundred ears from sixteen hills, more than six ears to a hill. The bearing season lasted from August 4th to 21st. Doubtless the experiment would have been a failure had we not taken precautions. We waited for a rain, and two days later, when the soil was dry enough to form a clump when lifted, we moved the roots with great care. The plants were covered with peach baskets for protection from the sun until the roots had taken hold of their new surroundings.

New York.

I. M. A.

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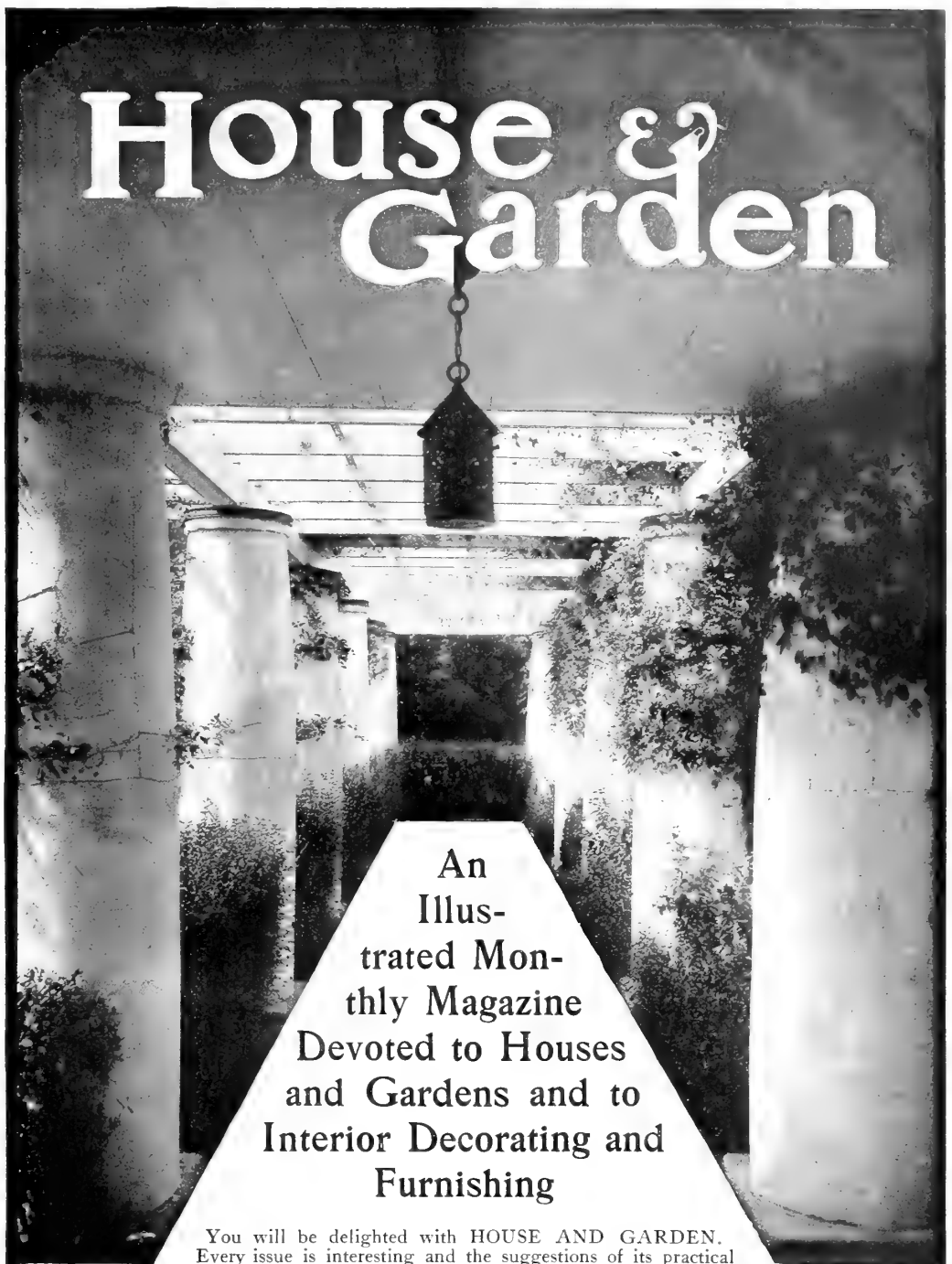
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FEATURES FOR 1906

We can mention only a few of the many attractive and helpful contributions which we have ready for future issues. Miss Margaret Greenleaf, the well-known expert on house decoration and furnishing, is writing a series of articles with suggestions for the Small House; Herbert Everett on "How to Hang Pictures;" reproductions of Victor Mindeleff's beautiful wall panels; notable articles by Ralph Adams Cram and Frank Miles Day on the designing of dwelling houses; fireproof homes; houses made of glass throughout—are some of the good things to appear in early issues.

The Garden Numbers, in the early spring, will tell fully how to plan and make the garden—the kitchen and flower garden, as well as the lawn around the house—and will be illustrated with plans and photographs.

We have also many pictures of new American country estates which have never yet been published and our correspondents abroad have sent us some fascinating examples of the new and old houses in which our foreign cousins live. But we have not space to tell you all about it. We want you to try being a subscriber.

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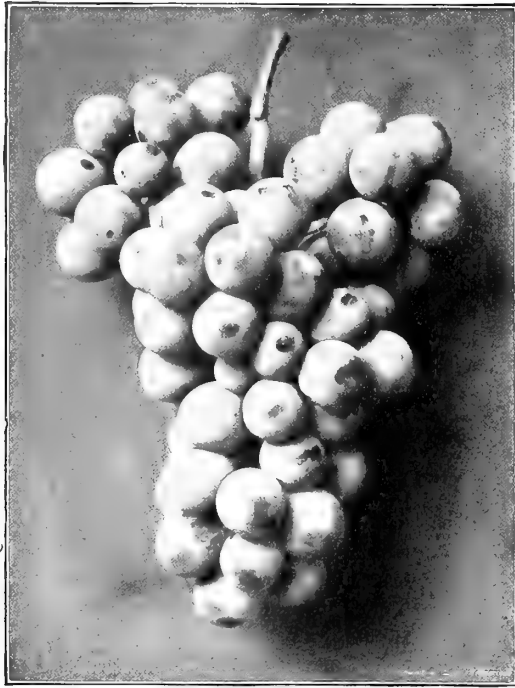
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Every issue is handsomely illustrated and from 32 to 64 pages a month are filled with interesting matter pertaining to fruit-growing and gardening. The first four issues of 1906 will be handsome special numbers devoted to the following subjects: January, The Horticultural Societies; February, Spraying; March, Gardening; April, Small Fruits. Any one of these numbers will be worth a dollar to you. We publish the "Brother Jonathan Series" of fruit books. Send your name and learn how to secure these books free.

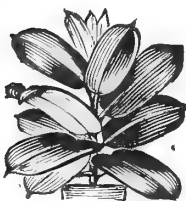
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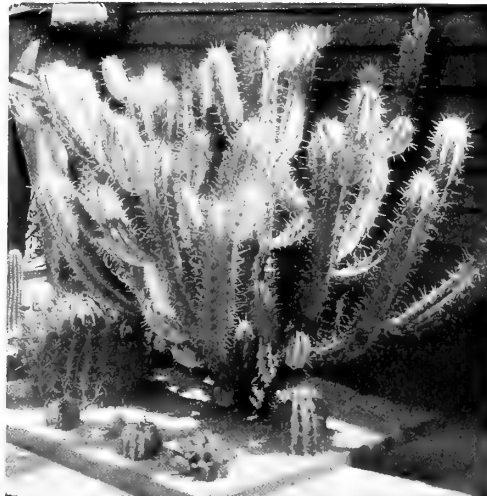
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A California Cactus Garden

THAT we have a few worthy collections of cactus cannot be denied, but private collections are few in number and generally very incomplete. Our climate is all that could be desired for the best growth of cacti, and good soils, aspects, etc., are easily obtained; even on the coast, almost within the reach of salt spray, the plants seem to thrive, though the general appearance is not so bright and clean as those grown further inland.

One of the most interesting local collections, both by reason of its rare species, fine growth and general appearance, is in the grounds of J. G. Mossin, a banker of Los Angeles. This collection was planted by the writer several years ago and has been visited by him at least once each year since planting, to mark its almost phenomenal growth.



Cacti grow amazingly if planted in a bed of prepared soil. This border has a foot of sand, black muck, and humus. The large plant is *Cereus Cochal*

While none of the plants were more than a few inches high when planted, some have now attained ten or more feet of growth. No doubt this development has been due to the unusually fine condition of the bed previous to planting.

In the old pueblo days of Los Angeles a zanja or water ditch, nearly three feet deep, ran through these grounds precisely under the present cactus garden and through its greatest length. This ditch was filled with stones, old bricks and mortar, tin cans and other rubbish. The soil on either side was banked high with frequent ditch cleanings, composed of sand and "black muck," with plenty of humus from decaying grass and weeds. This soil was used for the last



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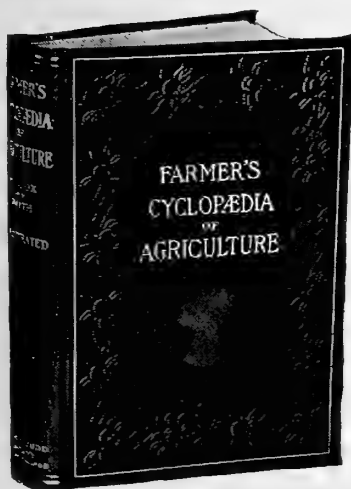
THE GARDEN MAGAZINE COUNTRY LIFE IN AMERICA THE WORLD'S WORK DOUBLEDAY PAGE & CO NEW YORK

TO OUR READERS ON APPROVAL

FARMER'S Cyclopedia of Agriculture

A Compendium of Agricultural Science and Practice on Farm, Orchard and Garden Crops, and the Feeding and Diseases of Farm Animals

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Assistant Editors in the Office of Experiment Stations, United States Department of Agriculture



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sect pests and fungous diseases, and remedies for their control. It contains an account of modern methods in feeding and handling all farm stock, including poultry. The diseases which affect different farm animals and poultry are described, and the most recent remedies suggested for controlling them. Other farm subjects, such as

Manures, Fertilizers, Principles of Feeding, Feeding Value of Crops and Feeds, Dairy Farming,

agricultural bulletins, college experiment stations and reading courses, poisonous plants, sterility of plants and animals, spraying, soils, drainage, irrigation, veterinary medicines, etc., are all clearly and concisely discussed.

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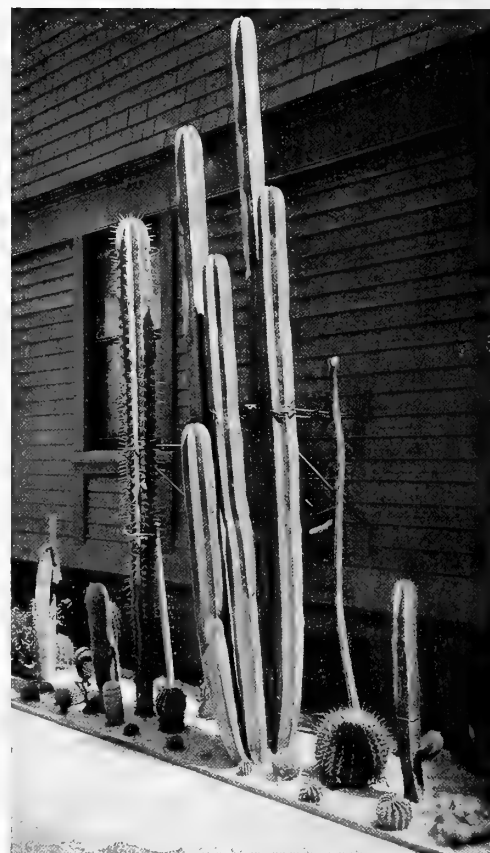
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HELLER BROTHERS

960 SOUTH MAIN ST. NEW CASTLE, INDIANA

foot of filling, and over this was spread about two inches of river sand. Into this bed the cacti were placed.

It seems to matter little how much rain falls on this bed, for during the past rainy season, one of the wettest in many years, not a plant has shown the least signs of decay, and within a few minutes after the close of a downpour the surface soil is free from an excess of water. Owing to this excellent drainage this bed may also be freely watered in summer. Cacti soon lose their bright colors, their health and often their lives, if persistently watered on the plants. For that reason this collection is irrigated frequently, but is only given a vigorous hosing above ground when the plants become dust-laden or “cobwebby.”



For sunny southern exposures in California cacti are ideal plants. The fence cactus of Mexico (*Cereus marginatus*) is the very tall plant in this photograph. The next taller is *C. geometrizans*

These plants are on the south side of the house, subject to the hot sun of our cloudless and almost tropical summer, and this seems to be the proper aspect for all cacti having heavy, succulent bodies. Knife cactus (*Phyllocacti*) and *Epiphyllums* (lobster-claw cactus) will not stand such exposure, and this part of his collection Mr. Mossin has placed under conditions precisely the reverse. On the north side of a tight board fence some of the latter may be found in bloom at nearly all seasons of the year. Along this fence has been spread a strip of “chicken wire,” three feet in width, securely stapled to every post. To this wire all of the more aspiring sorts are tied with raffia, and during the period of fullest bloom one may here see a veritable “flower fence.” These plants are also in heavier

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THE GARDEN MAGAZINE  COUNTRY LIFE IN AMERICA  THE WORLD'S WORK

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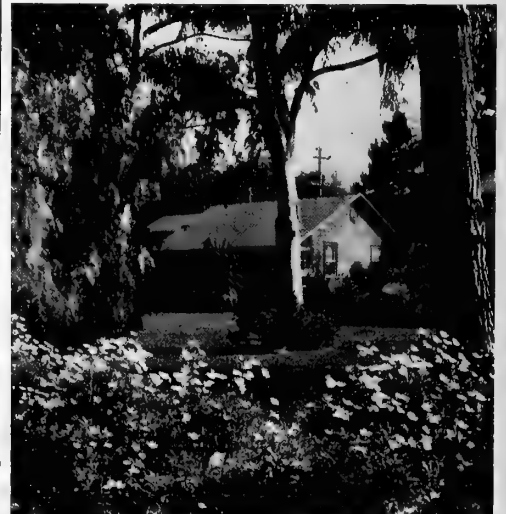
soil than those kinds planted in the sun. While these flowering cacti are extremely patient of neglect, they quickly respond to forcing and may be, if proper care is given, brought into bloom at any desired time. They are also responsive to fertilizers, as are most members of the family, providing the fertilizers be properly applied.

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ARTHUR T. BODDINGTON

SEEDSMAN

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How to Write Plant Names

Q. I wish to contribute a humble article to THE GARDEN MAGAZINE, and I should hate to commit all those crimes of nomenclature, spelling, capitalization, etc., that you scold about. Won't you publish your style-sheet so as to give an ordinary person a chance?
H. R. M.

A. Did we scold? We apologize. It is only in books that such things are inexcusable, because we have a standard in the "Cyclopedia of American Horticulture." In magazine manuscript one expects that sort of thing. But what a blessed relief it is to get the other kind!

Names. Give the common name of a plant first, with the standard name in parenthesis, followed by the nursery name, if that is different from the one prepared by the "Cyclopedia of American Horticulture," e. g. Japanese iris (*Iris laevigata*, known to the trade as *I. Kämpferi*).

Dates. In giving dates for performing horticultural operations, tell the place and give some other item to check the calendar, e. g. "The seeds of hardy vegetables should be sown near New York in April; the early crop April 1st, or whenever the plowing season begins; the main crop April 15th or as soon as the trees leaf out."

CAPITALIZE:

Generic names except when used in the plural and not derived from a proper name, e. g. *Aralia*, *chrysanthemums*, *Jeffersonias*. Exceptions: *dahlia*, *begonia* and a few others derived from proper names, but which through usage are common English words.

Specific names only when derived from proper names, either of person, as *Pentstemon Clevelandi*; or of country, as *Passiflora Brasiliensis*; or when it is a noun in apposition, as *Cinnamomum Camphora*. Follow the "Cyclopedia of American Horticulture."

Horticultural varieties, e. g. *Azalea Indica*, var. *Hortense Lambert*, *Diadem*, etc.

Botanical varieties only when derived from proper names.

ITALICIZE:

Both names when genus and species are given together, as *Aralia spinosa*; or all three when genus, species and variety are given, as *Phenix humilis*, var. *Hanceana*.

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The Garden Magazine



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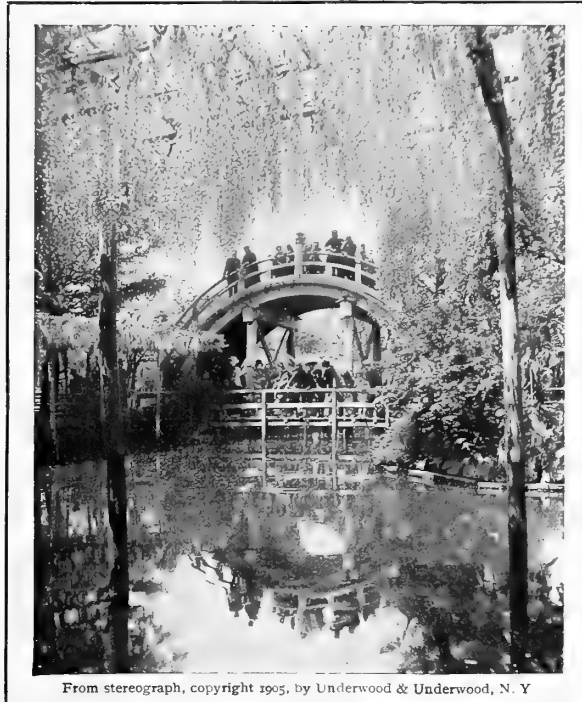
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VISITORS ARE ALWAYS WELCOME AT THE NURSERY

Our Garden and Floral Guide for 1906

will be ready for distribution January 1st. It is free for the asking. Several novelties of great merit to be introduced this year, including two especially fine Asters, Vick's Violet King and Vick's Mikado.

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PLANT OUR QUICK-GROWING NORTHERN SEED

You will gain from one to three weeks over your neighbors who plant home-grown seed. Think what higher prices this means. No more labor—no more land—but bigger, earlier crops, and larger profits.

Northern Seed grown in colder climate and shorter season matures much earlier.

POTATOES Our **Extra Early Petoskey** is a marvel. Large, fine, smooth, white. Big yielder; earliest of all. Try some this year and see for yourself. **Send 25c.**, stamps or coin, and get one large seed potato and catalogue (worth dollars to any grower). Complete line hardy Northern Grown Seeds. Catalogue alone free. Write today, while you have this before you.

Darling & Beahan, 403 Michigan St., Petoskey, Mich.



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STEVENS

No boy was ever lonely with a "Stevens" in his hands.

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We issue a catalogue of 140 pages, telling all about the "Stevens" shotguns, rifles and pistols; all about cartridges, targets, sights, weights of rifles, sighting them, etc. It also tells how to pick out a rifle or a gun, and how to take care of them. Send two 2-c. stamps and we will mail it to you free. If your dealer can't supply you with a "Stevens," write direct to us.

J. STEVENS ARMS & TOOL CO.
420 High Street
Chicopee Falls, Mass.
U. S. A.



PERSONAL EXPERIENCES

Getting Rid of Ants

A FEW years ago the ants took possession of my yard and built mounds or "ant hills" all over it. I tried all kinds of remedies, among them Paris green, London purple, corrosive sublimate, white hellebore, borax, tobacco, kerosene (or rather gasolene) and chloroform. With exception of the last two, all were used as solutions or mixtures in water. The solutions were gradually increased in strength till they killed plant life with which they came in contact—but they didn't kill the ants. Chloroform gave them a brief vacation only, while gasolene killed not only the ants but all the plants near by whose roots were affected in the least degree, seemingly, by the oil.

Finally I found a cure for the pest in a mixture of Persian insect powder in water—one-quarter pound in a gallon of water. The mixture does not injure plants, though one thorough application destroys the ant nest. Use pure powder, for much of the powder sold is badly adulterated, and hence of little value. Use freshly made powder, for unless kept dry and in air-tight containers after being made it loses gradually its insecticidal powers.

Put a quarter of a pound of good powder into a watering can (or other vessel with spout, from which a small stream can be poured) and add a little water; stir till powder is thoroughly wet and then add the balance of the gallon of water.

Keep stirring the mixture while using, and pour the mixture slowly into the tunnels of the ant hill till they are all filled. In my experience one application destroys the colony.

Dayton, Ohio. H. S. JEWETT, M.D.

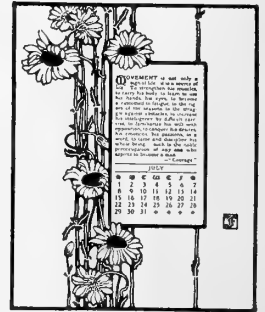
Quinces Worth Growing

HUMBLE though its services may be, the quince is capable of yielding as much pleasure at the table or profit in the market, for the care bestowed upon it, as either of its more fortunate relatives, the apple and pear. Moreover, when well grown, it is far more beautiful in flower, foliage and fruit than the apple or pear, and may be made a thing of beauty as well as of utility on the home grounds. Most people do not give it fair play, and these suggestions have been offered in its defence.

The Best New Year's Gift

The Simple Life Calendar

The Simple Life Calendar



Selections from the works of the Rev. Charles Wagner, by permission of Messrs. Dodd, Mead & Co., etc.

Twelve leaves in color, from designs by C. B. Falls. (9 1/4 x 13 in.) Boxed, \$1.00.

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All Seed Risks are covered by our three warrants. By this we mean that

GREGORY'S SEED

shall always be fresh, pure and reliable. Our free catalogue also contains a lot of valuable farm and garden facts.

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and plants. Extensive nurseries in Japan and America.
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Cuts from both sides of limb and does not bruise the bark. We pay Express charges on all orders. Write for circular and prices.

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Don't buy any seeds for your garden until you get a copy of

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and see the actual photographs of choice vegetables and flowers you can raise from our tested thoroughbred seeds

June Pink Tomato

(photograph above) is one of our newest varieties. A fleshy, heavy, bright, dainty pink tomato of medium size. Smooth and well shaped—no cracks or green core—and ripens as early as the celebrated Sparks' Earliana. Has no tendency to blight, yields clusters of six to ten tomatoes both at crown and forks of branches, and bears until frost.

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Many other equally good novelties in vegetables and flowers.

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THE tremendous increase of interest in dogs and canine matters was never more truly evinced than this year. "Every dog has his day"—and these are the days for exhibition dogs. All kinds of dogs are treated adequately, for the first time in America, in **The Dog Book**, by JAMES WATSON. To be in ten parts. I. to VI. now ready. Well illustrated.

(\$1.10 each, subscription)

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YOU can learn all that is known about the raising, breeding, care and sale of every kind of feathered product in **The Poultry Book**. It is the most complete and authoritative book on the subject ever printed in America. Superbly illustrated in color and black-and-white, by HARRISON WEIR.

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DOUBLEDAY PAGE & CO NEW YORK

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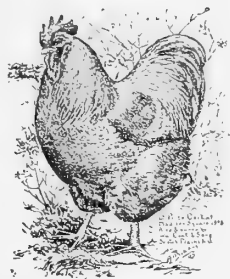
THE DIEHL-SCHILLING CO.
Box 610, Easton, Pa.



Poultry, Kennel and Live Stock Directory

Information about the selection or care of dogs, poultry and live stock will be gladly given. Address INFORMATION DEPARTMENT, THE GARDEN MAGAZINE, 133 East 16th St., New York

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BUFF ORPINGTON COCK. First prize, Madison Square, 1899. Owned and bred by Wm. Cook & Sons.

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IF you want the *best Orpingtons*, any of the ten varieties, now is the time to send for them to their *originators* at the above address. No country home is complete without these beautiful fowls, the best layers, larger, hardier, quicker growing and more handsome than any other fowls.

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We are by far the largest Breeders, Exhibitors, Importers and Exporters in the World, winning over 7,700 cups and prizes. Inspection of poultry farms cordially invited. Trains met. Advice free.

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Yards stocked with birds of the most noted prize-winning strains in America. Old and young stock for sale, of all varieties for breeding or exhibition. 2,000 to select from.

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and Almanac for 1906 contains 224 pages, with many fine colored plates of fowls true to life. It tells all about chickens, their care, diseases and remedies. All about incubators and how to operate them. All about poultry houses and how to build them. It's really an encyclopedia of chickendom. You need it. Price only 15 cts.

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"The Breed that Lays is the Breed that Pays" Single Comb White Leghorns

are the greatest layers known. We are the largest breeders in the world of this deservedly popular variety. A pen of these fowls will make big money for you. A customer in 1904 bought two sittings from our special matings and raised from them a pen that won at the great Chicago Show in 1905. Our stock will win prizes for you in the hottest competition. Our mating list for 1906 gives many pictures of our farm and birds. We want you to have a copy of this booklet. Send for it to-day. It is free. WHITE LEGHORN POULTRY YARDS CO., 2 Hooker St., Waterville, N. Y.



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This book is printed in several Beautiful Colors and is larger than ever. Contains a Fine Chromo of lifelike fowls. It illustrates and describes 60 varieties of poultry, ducks, geese, pigeons, etc. It shows best equipped poultry yards and houses—how to build; cure for diseases, and all kinds of information indispensable to poultry-keepers. Send 10 cents for this noted book. B. H. GREIDER, :: RHEEMS, PA.



LEARN POULTRY CULTURE

We can teach you thoroughly, successfully. Our original, personal correspondence course of instruction is interesting, practical, costs but little. A safe guide to beginners, invaluable to old poultry raisers. We teach you how to make any plot of ground, large or small, pay a sure dividend of from 25 to 50 per cent on the investment. Individual attention given each student. Write for free booklet telling how to make poultry pay. COLUMBIA SCHOOL OF POULTRY CULTURE, 59 Harvey Bldg., Waterville, N. Y.

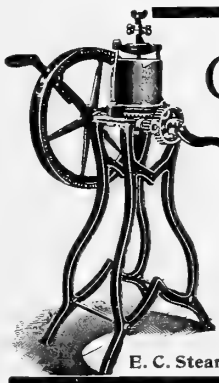


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Dogs



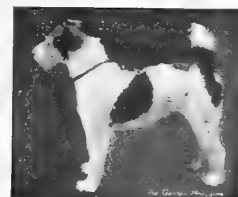
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Offered as companions. Not given to fighting or roaming—Best for children's pets.

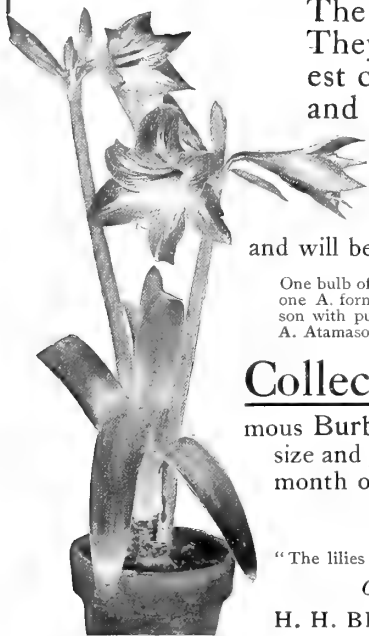
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NEW CITY, ROCKLAND CO., NEW YORK (N. Y. office 44 New St.), offers young puppies either wire or smooth haired to be shipped as soon as weaned. DOGS \$15, BITCHES \$10. This is an excellent opportunity to obtain the Cairnmuir blood at very reasonable prices. Purchasers should send cheque with order, stating sex and variety. Grown dogs and older puppies for sale at all times. Also Welsh terriers.



The Beautiful Amaryllis



The most aristocratic of all bulbous plants. They have large funnel shaped flowers in richest colors. They are magnificent house plants and in the summer are unrivalled for porch decoration or growing in the garden.

Collection No. 1 includes five magnificent varieties, all large bulbs, and will be sent, *express charges prepaid by us*, for **One Dollar**.

One bulb of *A. Belladonna*, a beautiful soft rose color, very large umbels, deliciously fragrant; one *A. formosissima*, a fiery scarlet, a free bloomer; one *A. Johnsoni*, a magnificent deep crimson with pure white stripe; one *A. regina*, a superb salmon color with white center; and two *A. Atamaso*, a very delicate pure white flower.

Collection No. 2 the same as Collection No. 1 except it includes besides a bulb of the enormous Burbank's Giant Hybrid, the amaryllis of unsurpassed beauty, size and profusion of bloom. This is a special low-priced offer for this month only. Price of collection, *express prepaid by us*, **Two Dollars**. (Enclose two dollars and write us at once)

We receive hundreds of letters, here is one:

"The lilies received are the best I have ever bought."—H. H. AMHERST, Mass.

Our interesting catalogue is ready. Send for it

H. H. BERGER & COMPANY, 47 Barclay St., NEW YORK



There are few varieties, because quinces are used so little that it has not paid as well to develop new sorts as it has for apples. The principal varieties commonly cultivated are Orange (also called Apple quince), Meech, Rea, Champion, Fuller, Borgeat, Van Deman, Alaska. Orange is grown probably more than all others combined, which is sufficient recommendation for it. It is without question the best main crop variety for general purposes. It varies greatly in size and form; some strains are much better than others. For home use an earlier variety, as Rea, and a later variety, as Champion, may be added. Champion is the best-keeping variety we have, being retained in good shape into February and later. S. W. FLETCHER.

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THE trumpet flower (*Brugmansia arborea*) as a subject for indoor decoration appeals to one greatly. Its white flowers are nearly a foot long, and fragrant. It flowers when most other things are past, if kept indoors, and the plant looks like a small tree. It is as well adapted to the living-room as to



The trumpet flower (*Brugmansia arborea*) is a useful shrub for indoors. Its white, fragrant flowers are produced in October and November

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Virginia and Chesapeake, winners of \$100 GOLD PRIZE offers; also Cardinal, Commonwealth, North Shore, Oaks Early, New York, Glen Mary, Stevens' Champion, and go others; best list, good stock, reasonable prices. Dewberries: Lucretia and Austin's. Cabbage: New Volga and 20 other

SEEDS

Cucumbers: Peninsula Prize, Allen's Pride of the Market, Arlington Spine, Shamrock, etc. Cantaloupe: Allen's First Choice, True Rocky Ford. Tomatoes: Livingston's Globe, Allen's Best, Chalk Jewel, Maule's Earliest, Earliana, etc. Kansas King, Eighty Day Yellow Dent, Maryland Queen Field Corn. Best new and standard Garden, Field and Flower seeds, Asparagus Roots, Special Agricultural Implements, etc. 60 PAGE CATALOGUE FREE. Send address on postal NOW. It tells about lots of good things for the farm and garden and where to get them.

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We have been in the business for 35 years, and are called the "Growers of the Best Roses in America."

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Box P, WEST GROVE, PA.



Lily of the Valley for the Window Garden

Plant 12 bulbs in a 5-inch pot, place the pot in a light sunny window, and the bulbs will be in flower in about 4 weeks' time. If a succession of bloom is wanted, plant as many pots or boxes as will be required and place them outside in a partly protected place, covering them with leaves, straw or any other material, so as to make it convenient to get at in case the ground is frozen too severely. Freezing the bulbs does not injure them, however.

Price: Bundle 25 bulbs, \$1.00. Four bundles, 100 bulbs, \$3.00
Delivered free anywhere in the United States.

How to Grow Narcissus Paper-White Grandiflora in Water

A very unique, simple and novel way to grow this variety of Narcissus is to place six or eight bulbs in a shallow glass or china bowl with water. Support the bulbs with pebbles or gravel as you would the Chinese Sacred Lily bulbs; place the bowl in a dark place until the roots have started, when you should bring them to the light. Keep the bowls filled with water and the bulbs will take care of themselves. You will have a beautiful and luxuriant display of delightfully fragrant flowers in a short time—in fact within six weeks after planting if desired. The flowers are nearly two inches across, a dozen or more in a cluster, and are in no way inferior to those grown in garden soil. A number of bowls planted in succession of two weeks apart will give a beautiful display of flowers all winter.

Price, 50 cents per dozen; \$3.00 per hundred
Delivered free anywhere in the United States.

Write for our 1906 Spring Catalogue of Vegetable and Flower Seeds ready January 1st.

STUMPP & WALTER CO., Seedsmen, 50 Barclay St., N. Y.



the greenhouse, the only objection to its being in the former is the space it occupies, on account of its spreading tops and large aggregation of roots, which require big tubs. I keep my plant in the greenhouse, because it is more easily watered there than elsewhere.

When it was photographed, I had to take it out of doors for a short time in order to obtain a good view of it. In the latitude of Detroit it begins to flower late in the fall, and blooms continuously until after Thanksgiving, bearing a large number of lily-like flowers that are suspended like bells and exhale a delicate fragrance. On the plant they last for several days, particularly in a cool room.

Michigan.

HUGO ERICHSEN.



RESIDENCE OF HOWARD C. SMITH, OYSTER BAY L. I. EDWARD H. FICKEN, ARCHITECT

A New Idea in Planting the Grounds

We present to you a method by which you can see the finished result before planting. The trees, shrubs and vines around the house illustrated above are now being planted by us. They were sketched on the photograph to show the owner exactly how the house would look after the planting was done.

We can help you in a similar way.

If you expect to improve your grounds this Spring, let us make you a sketch and estimate now before the busy Spring season starts.

The sketch, having all the appearances of a photograph, will show the exact effect of your grounds after they have been planted.

Now is the time to plan the grounds in readiness for early Spring planting. On

account of the large amount of work already ordered for the coming Spring which will engross our complete attention immediately the frost is out of the ground, we would ask that you write us now as it will be impossible to take up this work in the busy planting season. Our landscape architect, formerly Superintendent Gardener of the Park System, Borough of the Bronx, New York City, is at your disposal now.

We carry out our landscape designs by the use of only the finest *Specimen Evergreens and Deciduous Trees and Shrubs*, which we grow under ideal conditions in our nurseries. Thus the most hoped for effects cannot fail to materialize. *Price list of our stock sent on request.*

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THE COUNTRY HOUSE

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THIS volume gives competently and in detail, yet without technicalities, all the information necessary in the building of a country house.

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THE GARDEN MAGAZINE  COUNTRY LIFE IN AMERICA  THE WORLD'S WORK

DOUBLEDAY PAGE & CO NEW YORK



NOW IS THE TIME TO PLAN TO MAKE YOUR GROUNDS BEAUTIFUL

Early preparation means that when the Spring planting season opens you experience no delay in the proper execution of your work.

If you have an old estate to renovate or a new one to develop, a formal or old-fashioned garden to construct, or any work to be done to generally improve the grounds, you should consult us at once. Your grounds require individual treatment; by consulting with us at this time we are able to give whatever work you have under consideration careful attention. Don't defer the matter until our busy planting season.

B. & A. HARDY SPECIALTIES

Evergreens, Conifers, Blue Spruce, Hybrid and Maximum Rhododendrons, Azaleas, Shade and Weeping Trees, Flowering Shrubs, Hardy Old-Fashioned Flowers, Grasses and Bulbs, Hybrid Perpetual and Tea Roses, in tree and bush form, Vines and Climbers, Trained and Ordinary Fruit Trees, English pot-grown Grape Vines. All of these and many others are growing in our Nursery and enumerated in our instructive, illustrative catalogue.

We are always pleased to have intending purchasers visit our Nursery. Rutherford is the first station out on the Main Line of the Erie Railroad from New York and Jersey City.

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NURSEYMEN & FLORISTS Rutherford, N. J.



Burbank's New Dahlias

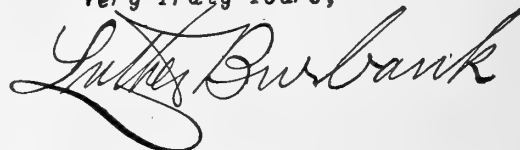
Santa Rosa, Cal., Aug. 7, 1905.

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Dear Sirs:—After having tested Dahlias for many years it is my belief that these which I am sending you now and the two which you have on trial are the best Dahlias in existence, considering their perfect doubleness, novelty, abundance of bloom, long, strong stems, health and vigor of plants.

I have selected these seedlings out of many thousands during the last fifteen years and they are the first which I have ever offered for sale. I wish, however, to reserve the privilege of naming three or four of them. One I desire to name Burbank, another Santa Rosa, and one California.

Very Truly Yours,



VAUGHAN'S SEED STORE Chicago and New York



Other Burbank Specialties

Australian Star Flower (seed).
New Yellowish Calla (bulbs).
New Hybrid Amaryllis (bulbs).
Verbena Mayflower (seed).
"Burbank" Canna (plants).
Shasta Daisy (seeds and plants).

Burbank Dahlia Seed.
Crimson Winter Rhubarb (seeds and plants).
Potato Seed, new varieties.
Cream Cup (seed).
"Burbank" Rose.
Hybrid Crinums (bulbs).

All of which will be fully described in Vaughan's 1906 Catalogue
(Ready in January)

This complete 150-page edition will be **MAILED**
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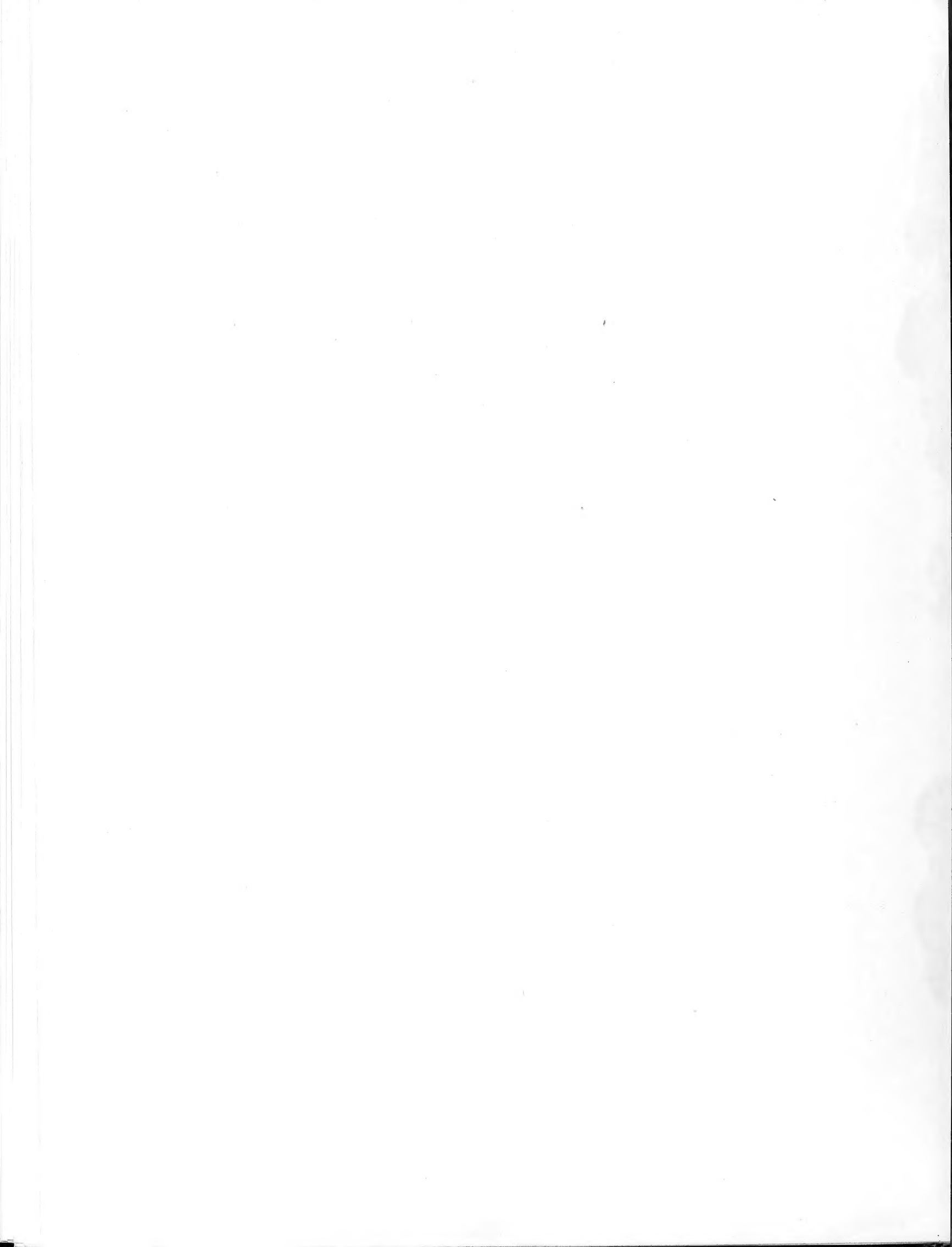
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