GARDENERS AND FLORISTS' ANNUAL *for* 1918

Florists and Nurserymen's Calendar of Work for the Year. A Review of the Activities of 1917. Work of the National Societies. Legal Notes and Verdicts. A Business Section Devoted to Banking, Insurance, Shipping, etc. A Section of Special Articles on "Adjusting Selling Prices," "Round of the Year in the Seed Trade," "Preparation of Seed and Nursery Catalogs," "Vegetable Crops Under Glass;" and an Invaluable Chapter of Rules, Notes and Recipes

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GARDENERS AND FLORISTS' ANNUAL *for* 1918

Calendar for the Twelve months · Work of the National Societies · Legal Notes and Verdicts · Necrology Business Section devoted to Banking, Insurance, Exporting, Importing, etc. · Florists' and Nurseymen's Calendar of Work for the Year · Prominent Men Rules, Notes and Recipes

A Section of Special Articles of Current Interest Among Them:

Adjusting Selling Prices—Round of the Year in Seed Trade—Some Suggestions for Shippers—Seed and Nursery Catalogs: Some Friendly Criticisms and Suggestions—Vegetable Crops under Glass

A Year Book

For FLORISTS, SEEDSMEN, NURSERYMEN, GARDENERS and ALL INTERESTED IN HORTICULTURE

Edited by

J. HARRISON DICK

A. T. DE LA MARE CO. Inc., 438 to 448 W. 37th St., New York

In New Working Togs!

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FOREWORD

THIS is the fourth annual edition of the GARDENERS & FLORISTS' ANNUAL. That the book fills a need in floricultural and horticultural periodical literature, is proven by the fact that several thousand copies are sold each year.

Let us say right here that *each annual edition is a new book.* The intention is to form ultimately a reference library of horticultural progress throughout the years, and while gathering within the covers of an annual volume the facts and data pertaining to the year's doings in our line of industry, the book is yet much more than a mere record of these activities—it is a book of ready reference on a thousand and one subjects that daily, weekly, or monthly confront the grower, the retailer, the seedsman, the nurseryman, the gardener. It has been fittingly called the "Little Brown Book of Facts."

A few of the features of outstanding value are necessarily repeated from year to year, but every section is revised so that the book can be taken authoritatively as up-to-date.

Pages could be filled with testimonials from men of high standing in the craft, who have testified as to the value of the book to them, principally in supplying information in a handy form not otherwise obtainable.

☾ Last Quarter, 5th day, 6h. 50m., morning.
● New Moon, 12th day, 5h. 36m., evening.
☽ First Quarter, 19th day, 9h. 38m., morning
○ Full Moon, 26th day, 10h. 14m., evening.

1	Tu.	**New Year's Day.** Sun rises 7.14 a. m., sets 4.22 p. m.
2	W.	Prune and train pot rambler Roses for Easter flowering.
3	Th.	A campaign against Mistletoe as being a heathenish symbol was one of the freak ebullitions of Christmas, at Chicago and Buffalo.
4	Fr.	
5	Sa.	Southern Gladioli are now in the markets; also Lilac.
6	S.	**Twelfth Day**, Epiphany.
7	M.	Southern Daffodils selling in Eastern markets.
8	Tu.	Average temperature for this period of the year is 31 degs.
9	W.	Among the forced shrubs in flower and selling in the stores are Almond, Forsythia and Spiræa.
10	Th.	
11	Fr.	Lorraine, Cincinnati and Peterson Begonias can be propagated.
12	Sa.	Erlangea tomentosa as a pot plant has merits; flowers in lavender clusters.
13	S.	Tulips, Hyacinths and Daffodils are obtainable.
14	M.	English double Daisies may be sown.
15	Tu.	Hydrangeas for Easter flowering may be placed in temperature 50 degs.
16	W.	Epiphyllum truncatum, the Christmas Cactus, is occasionally seen on the market.
17	Th.	Burns' birthday is on the 25th. A Burns' window is in order.
18	Fr.	Am. Forest Ass'n proposed quarantine against imported stock, 1917.
19	Sa.	**Lee's birthday.** Co-operation and organization are mighty helps to success of the firms in any industry.
20	S.	
21	M.	Calcium chloride is a good accelerator for hardening concrete.
22	Tu.	
23	W.	Erica melanthera is a good seller at Christmas and in January.
24	Th.	Trees with frozen ball roots may be removed now.
25	Fr.	Pansies to flower in the middle of May may be sown now.
26	Sa.	"Smile a smile, and when you smile another smiles, and soon there's miles and miles of smiles."
27	S.	
28	M.	Dense hedges may be made of Salix viminalis, the Madeira Willow, by plaiting the branches.
29	Tu.	
30	W.	**Amer. Carnation Soc's** convention at Boston (2 days). Zero weather in 1917 all over the country.
31	Th.	

☾ Last Quarter, 4th day, 2h. 52m., morning.

● New Moon, 11th day, 5h. 5m., morning.

☽ First Quarter, 17th day, 7h. 57m., evening.

○ Full Moon, 25th day, 4h. 35m., evening.

1	Fr.	Floods in Southern California, 1916.
2	Sa.	**Candlemas:** Consecration of the lighted candles. Ground hog day. Mushrooms sell at 50c. to 60c. per lb., at Chicago, wholesale.
3	S.	Tomatoes, in New York, are 10c. to 25c. per lb., wholesale.
4	M.	There is a demand for light machinery for land work.
5	Tu.	Twenty fine species of American birds have become extinct within the memory of persons now living.
6	W.	
7	Th.	
8	Fr.	Hemlock Spruce makes a graceful beautiful and hardy wind screen. Arborvitæ and Norway Spruce are also good.
9	Sa.	
10	S.	An English paper published a list of over 50 flowers and shrubs in bloom on this date in the open air there, including Anemones, Snowdrops, Crocuses, Lenten Roses, Rhododendrons, Jasmines, Ericas.
11	M.	
12	Tu.	**Lincoln's birthday;** also Georgia Day in Georgia.
13	W.	Kniphofias are favorites for Fall cutting. Grow a stock.
14	Th.	St. Valentine's Day.
15	Fr.	Cypripedium insigne Sanderæ sells at 50c. per bloom.
16	Sa.	Southern Daffodils are plentiful. Forsythia selling in the shops.
17	S.	More use could be made of Selaginellas for decorations.
18	M.	The freight rates on a barrel of Tuberoses from New York to Bordeaux in 1917 was over $8.
19	Tu.	
20	W.	Why not have some Golden Privet in pots?
21	Th.	Burn nests of the brown tail moth.
22	Fr.	**Washington's Birthday.** Procure sparrow traps.
23	Sa.	Spray shrubs and trees for scale, if weather permits.
24	S.	Average seasonal temperature in New York is 39 degs. F. One month ago it was 28 degs. F.
25	M.	
26	Tu.	Frames for hotbeds should be looked over or ordered.
27	W.	Look up novelties for Easter, either as receptacles or plants.
28	Th.	Nesting boxes will soon be wanted. Encourage insect-eating birds.

☾ Last Quarter, 5th day, 7h. 44m., evening.
● New Moon, 12th day, 2h. 52m., evening.
☽ First Quarter, 19th day, 8h. 30m., morning.
○ Full Moon, 27th day, 10h. 33m., morning.

1	Fr.	It is time to order shrubs and hardy plants.
2	Sa.	Procure hotbed frames and sashes at once.
3	S.	Hunnemannia fumariæfolia is a delightful annual for outdoors.
4	M.	Have you a stock of the fragrant Daphne odora, a cool house subject?
5	Tu.	The flower markets usually become glutted at this period.
6	W.	It is now that the gardener or grower values his warm pits and frames.
7	Th.	The demand for florists' cut flowers in March, 1917, was slow. With sluggish markets, soft coal was costing $3.50 per ton, and $7 to $10 for hard coal, and cold weather prevailed.
9	Fr.	
9	Sa.	
10	S.	Flowers of Lilium regale sold on Boston market at this date, 1917.
11	M	Sand that is clean and sharp is a preventive of damping-off of seedlings.
12	Tu.	Tornado at New Castle, Ind., in 1917, causing much loss.
13	W.	Robins and redbirds return north to latitude of southern Indiana.
14	Th.	This is the period of the large Spring shows.—N. Y. Sh. 14th to 21st.
15	Fr.	Crocuses begin to bloom in sheltered places.
16	Sa.	St. Louis, Mo., held its first large flower show in 1917.
17	S.	**St. Patrick's Day.** Make a hotbed.
18	M.	The Yellow Freesias are much in request. They are rich and handsome.
19	Tu.	Statues and fountains add immensely to scenic effect of flower shows.
20	W.	First Nat. Rose Fest. opened at Phila., 1917.
21	Th.	Saxifraga cordata is one of the most desirable of hardy garden plants.
22	Fr.	Ninety-eight bushels of Potatoes per acre is the average yield.
23	Sa.	The New Australia Concord Sweet Peas were on view at N. Y. show March, 1917, for the first time.
24	S.	
25	M.	**Maryland Day** in Maryland.
26	Tu.	Narcissus Johnstoni Queen of Spain, in pots, is a gem.
27	W.	A plant of Imantophyllum miniatum measuring 5 ft. through and having 24 large trusses was grown by R. Tyson, Madison, N. J.
28	Th.	Jasminum primulinum deserves more attention.
29	Fr.	
30	Sa.	
31	S.	**Easter Sunday.** In 1917 a heavy snowfall came on Easter Monday.

☾ Last Quarter. 4th day, 8h. 33m., morning.
● New Moon, 10th day, 11h. 34m., evening.
☽ First Quarter, 17th day, 11h. 8m., evening.
○ Full Moon, 26th day, 3h., 5m., morning.

1	M.	**Palm Sunday, 1917;** temperature up to 79 degs. F.
2	Tu.	Phlox amœna and Candytuft in pots on market.
3	W.	Bright weather induced bees from hives at this time last year and at a Louisville (Ky.) funeral they swarmed over the floral pieces.
4	Th.	
5	Fr.	The Peaches and Cherries are flowering at Los Angeles, Cal., and all the valleys and foothills around are aglow with flowers.
6	Sa.	**Fifth National Flower Show** opens at St. Louis, Mo. The show continues to the 15th.
7	S.	
8	M.	Average seasonal temperature in New York City, 44 degs. F.
9	Tu.	The Violet crop is all but over.
10	W.	Seedsmen should exhibit boxes of germinated grass seed now.
11	Th.	The bullfrogs now awaken the stillness of the marshes.
12	Fr.	Average date when last snow clears from ground at Brooklyn, N. Y.
13	Sa.	**Jefferson's birthday.** A couplet last year, when Potatoes were $5 per bushel, expressed the situation thus: "Three Potatoes for 4 of us, Thank the Lord there are no more of us."
14	S.	
15	M.	Backyard Garden Clubs start up about now. N. Y. Bird Day.
16	Tu.	Pres. Wilson's Proc. re food supplies, 1917. Mother's Day advertising
17	W.	Diascia Barberæ is a dainty little annual from S. Africa.
18	Th.	Birds are champion insect destroyers; give them nesting boxes.
19	Fr.	A novel bouquet can be made of small apples, almonds and raisins.
20	Sa.	Dig out Peach curculio. Bechtle's Dbl. Flowering Crab is a gem.
21	S.	Citrus quarantine for Florida promulgated and White Pine quarantine extended, 1917.
22	M.	
23	Tu.	We urge the planting of dwarf fruit trees in small gardens
24	W.	Purple Clematis in pots make a novelty for the retailer.
25	Th.	Cattleyas usually fetch 50c. to 75c. each, wholesale.
26	Fr.	**Average temperature** at New York City 49 degs. F.
27	Sa.	For Antirrhinum rust spray with Blackleaf 40 at 1 teaspoonful to gallon of water with a little soap added.
28	S.	
29	M.	Spray for Peach leaf curl.
30	Tu.	Keep planting batches of Gladioli. Bailey's Stand. Encyclopedia completed, 1917.

☾ Last Quarter, 3rd day, 5h. 26m., evening.
● New Moon, 10th day, 8h. 1m., morning.
☽ First Quarter, 17th day, 3b. 14m., evening.
○ Full Moon, 25th day, 5b. 32m., evening.

1	W.	**May Day.** Pine and Currant quarantine became effective, 1917.
2	Tb.	Clean up day in many cities. Average temperature is 54 degs. F. Peonies are now in the market. Their season extends five to six weeks.
3	Fr.	
4	Sa.	Agathæa caelestis makes a good bunch flower.
5	S.	**First National** co-operative flr. ad. in *Literary Digest*, 1917.
6	M.	Do your children have to go to a neighbor's garden for shade?
7	Tu.	From the 3d to the 10th are the best dates for planting corn at Wooster, O., as proved by experiments. The general rule is to plant a week later for every 100 miles north, or a week earlier for every 100 miles south.
8	W.	
9	Th.	
10	Fr.	Keep up your notes in your diary.
11	Sa.	"During the life of an Asparagus plant each should yield $1 in returns."
12	S.	**Mother's Day.**
13	M.	Young Tomato plants were selling in New York early in May, 1917, at 50c. per doz.; small seedling Lettuce, 30c. per doz.; Onion sets 45c. quart. Savoys, red Cabbages, Rutabagas, Knob Celery, 20c. per doz.
14	Tu.	
15	W.	
16	Th.	Coreopsis lanceolata, gently forced, can be had in flower; also Salpiglossis.
17	Fr.	
18	Sa.	Nandina domestica, a graceful feathery-looking shrub, bas been recommended as a pot plant for ornamental uses.
19	S.	
20	M.	Nursery advertising of potted stock is now profitable.
21	Tu.	Lime helps nearly all soils and especially heavy soils. Use at the rate of 10 lbs. per 100 sq. ft.
22	W.	
23	Th.	Helxine Soliorolii, a tiny creeping plant for greenhouses or open-air rockeries, is bardy.
24	Fr.	
25	Sa.	It is now safe to plant Tomatoes, Egg-plants, Peppers in Central N. Y.
26	S.	Now is the time to select your favorite Darwin and Cottage Tulips.
27	M.	Wistaria venusta is a wbite-flowered species.
28	Tu.	Skunk Cabbage (Symplocarpus fœtidus) is handsome in the woods.
29	W.	Lily of the Valley will grow in sun or semi-shade.
30	Th.	**Memorial Day.**
31	Fr.	Rhododendron Carolinianum and R. Veseyi, two splendid natives.

☾ Last Quarter, 1st day, 11h. 20m., evening.
● New Moon, 8th day, 5h. 3m., evening.
☽ First Quarter, 16th day, 8h. 12m., morning.
○ Full Moon, 24th day, 5h. 38m., morning.

1	Sa.	Sun rises 4.10 a. m.; sets 7.14 p. m. German Irises in flower.
2	S.	June is the period of commencements and weddings.
3	M.	Finish planting the Dahlias.
4	Tu.	Take measures to destroy mosquitoes. See "Rules and Recipes."
5	W.	Whitewash and lime-sulphur is a good protection against mice that gnaw the bark of young fruit trees. Use at the rate of 40 lbs. of stone lime to 50 gals. of water, this having 3 or 4 gals. of concentrated lime-sulphur added.
6	Th.	
7	Fr.	
8	Sa.	Renovations to greenhouses and boilers can de done.
9	S.	**Whitsunday.** Total eclipse of the sun.
10	M.	An acre of land is 43,560 sq. ft.; roughly, 69 yds. each way.
11	Tu.	Strawberry weevil may be fought by use of one part powdered arsenate of lead and five parts finely ground sulphur. Dust this over the plants.
12	W.	
13	Th.	Cement and clean sharp sand may be mixed and applied to old stone walls as plaster. First wet the walls. Periwinkle is one of the best covers for shady banks.
14	Fr.	
15	Sa.	
16	S.	Spraying with Bordeaux mixture will control leaf blight and rust on Melons and Squash.
17	M.	Dried Rose petals are a great delight. Why not place in a jar?
18	Tu.	**Amer. Seed Trade Ass'n** holds annual convention at Chicago.
19	W.	Replant Roses in benches indoors. Fireflies appear.
20	Th.	Catnip, Nepeta cataria, collected when in flower and dried, makes an infusion which is mildly stimulating.
21	Fr.	**Longest day in the year.** Season for picking cherries.
22	Sa.	Buckwheat straw contains 16% of nitrogen; Oat straw 12%; wheat straw 10%.
23	S.	
24	M.	**Midsummer Day.**
25	Tu.	American Ass'n of Nurserymen hold annual convention.
26	W.	In Pa. a farmer may legally kill wild animals which molest gardens.
27	Th.	Golden Privet is bright and is useful in many ways.
28	Fr.	Delphiniums may be cut down after blooming; they will then flower later.
29	Sa.	
30	S.	Arrange Independence Day program (July 4).

☾ Last Quarter, 1st day, 3h. 43m., morning.
● New Moon, 8th day, 3h. 22m., morning,
☽ First Quarter, 16th day, 1h. 25m., morning.
○ Full Moon, 23rd day, 3h. 35m., evening.
☾ Last Quarter, 30th day, 8h. 14m., morning.

1	M	Sun rises 4.10 a. m.; sets 7.25 p. m. Make Red Currant jelly.
2	Tu.	Send for Dept. of Agri. bulletins 839 and 841 on canning and drying.
3	W.	Early Corn on market.
4	Th.	**Declaration of Independence, 1776.** Crickets are heard.
5	Fr.	Rainfall of chief Southern States averages 45-55 inches annually.
6	Sa.	Lilium candidum, Sweet Peas, Roses, Foxgloves, Canterbury Bells now in bloom in New York.
7	S.	**Average temperature** in New York City is 72 dgs. F.
8	M.	It costs $128 a year to board a farm hand.
9	Tu.	Gladioli, Antirrhinums, Asters, Zinnias are in brilliant bloom.
10	W.	Rainfall of the Central or Prairie States is 35-40 inches annually.
11	Th.	Chalk is carbonate of lime. When finely levigated and dried it forms ordinary whiting.
12	Fr.	
13	Sa.	Corrosive sublimate, a poison, is soluble in cold water in the proportion of 1 to 16. It will rid lawns of worms.
14	S.	
15	M.	**St. Swithin's Day.** Water Lilies now resplendent.
16	Tu.	The cost of draining an acre of land varies from $10 to $50.
17	W.	Use the cultivator regularly.
18	Th.	Chloride of lime is a powerful disinfectant, much used around cesspools or drains. It is formed by passing chlorine gas over freshly-slaked lime.
19	Fr.	
20	Sa.	
21	S.	House-flies are dangerous pests; read Bulletin 679 Dept. Agri.
22	M.	Gather and dry herbs as they flower.
23	Tu.	Take runners from Strawberries.
24	W.	**Dog-days begin.** Cover crops may be sown in nurseries.
25	Th.	Orris root is the sweet-scented root of Iris florentine.
26	Fr.	Cut worms may be poisoned by the use of a bran mash and arsenic.
27	Sa.	Keep the growths of Tomatoes thinned and regulated.
28	S.	Look up previous Annuals; there's new matter in every one.
29	M.	
30	Tu.	Pot up the earliest Freesias; also Roman Hyacinths.
31	W.	"Home preparedness—cans loaded with food."

New Moon, 6th day, 3h. 30m., evening.
First Quarter, 14th day, 6h. 16m. evening.
Full Moon, 22d day, 0h. 2m., morning.
Last Quarter, 28th day, 2h. 27m., evening.

1	Th.	Sun rises 4.36 a. m.; sets 7.05 p. m.
2	Fr.	Go after the Cabbage worm; dust with hellebore.
3	Sa.	Now is the time to transplant seedling Oaks.
4	S.	Dahlias, Zinnias and Lilium regale are flowers of the moment on Eastern markets.
5	M.	Sow Calendulas for flowering later.
6	Tu.	French bulbs arrive. Swat the flies.
7	W.	Mid-summer leaf feeders appear.
8	Th.	Fumigate greenhouses before planting.
9	Fr.	The average annual rainfall of Rocky Mt. States is 15-20 inches.
10	Sa.	Stock up on table ferns now for Winter.
11	S.	Heavy rains in most sections in 1917.
12	M.	See to repairs and glazing of greenhouses.
13	Tu.	Eastern Meadow Lark devours quantities of insect pests.
14	W.	Write Florists' Exchange for its catalog of books.
15	Th.	Order Calla tubers now.
16	Fr.	Sow Winter-flowering Stocks.
17	Sa.	See to your stock of decorative plants. Add a few novelties.
18	S.	
19	M	Potato-tuber moth appears in the Middle West.
20	Tu.	Insure your property—hail insurance, wind insurance, fire insurance.
21	W.	
22	Th.	Grasshoppers deposit their eggs now.
23	Fr.	
24	Sa.	Visit trial grounds and see annuals and other outdoor flowers.
25	S.	
26	M.	Get to know more about the wild flowers.
27	Tu.	Rose galls are caused by bacteria; remove galls and burn them.
28	W.	Spray with Bordeaux Mixture to prevent Celery blight.
29	Th.	Transplant Delphiniums to their Winter quarters.
30	Fr.	Pinch buds of indoor Roses if length of stem is desired.
31	Sa.	Robins feed on noxious insects.

New Moon, 5th day, 5h. 44m., morning.
First Quarter, 13th day, 10h. 2m., morning.
Full Moon, 20th day, 8h. 1m., morning.
Last Quarter, 26th day, 11h. 39m., evening.

1	S.	Sun rises 5.09 a, m.; sets 6.20 p. m. Black Chokeberry is now in bloom.
3	M.	**Labor Day.** Some seeds may be gathered.
3	Tu.	
4	W.	Map out Winter campaign now and keep ahead.
5	Th.	The Cannas are at their best. How stately they are.
6	Fr.	Pacific Northwest has annual rainfall of 70-80 in.; 40-62 in. is average precipitation in western parts of Washington State.
7	Sa.	
8	S.	Novelties of Dahlias are much in evidence now.
9	M.	Seeds of biennials and perennials may be sown.
10	Tu.	Buy limestone now for Fall use.
11	W.	**Harvest Moon.** Semperflorens Begonias are valued in the beds.
12	Th.	Nursery stock and bulbs from California sent to Flower Show in New York, 1917.
13	Fr.	Asheville, N. C., has heavy rainfall—70 inches.
14	Sa.	Destructive hail storms in various sections in 1917.
15	S.	Watch good and bad points in hardy flower garden.
16	M.	Yellow Marguerites are long lasting flowers.
17	Tu.	Staking and disbudding of 'Mums should be attended to.
18	W.	Cineraria maritima and pink Begonias go well together.
19	Th.	Fall crop of Tomatoes should be planted under glass.
20	Fr.	Sugar and tartar emetic (poison) will destroy ants.
21	Sa.	Aesculus parviflora, a handsome shrub, is but little grown.
22	S.	**First day of Autumn.**
23	M.	A collection of orchids is now profitable.
24	Tu.	Average temperature in New York is 62 degs. F.
25	W.	Violets should be housed now.
26	Th.	Orange Day is celebrated in Louisiana in September.
27	Fr.	Nemesias makes desirable flower for indoor culture.
28	Sa.	Lift your Christmas Peppers from outdoors now.
29	S.	Rats cause heavy losses in food each year, amounting to $200,000,000.
30	M.	Clear Buckthorn with pruning hook and knife.

New Moon, 4th day, 10h. 5m., evening.
First Quarter, 13th day, 0h. 0m., morning.
Full Moon, 19th day, 4h. 35m., evening.
Last Quarter, 26th day, 0h. 35m., evening.

1	Tu.	Burning all diseased parts of Hollyhocks attacked by rust prevents the fungus from living over Winter.
2	W.	*Florists' Exchange goes to press each Wednesday at noon.*
3	Th.	Keep a clear stem on the single stem 'Mums.
4	Fr.	Late planted Gladioli are flowering.
5	Sa.	Propagate Geraniums in sand bench instead of pots if crowded for room.
6	S.	How about Sweet Peas in pots for Spring and Easter?
7	M.	Don't miss the scarlet, orange and gold of the trees.
8	Tu.	Have you a list of books for Winter reading?
9	W.	**St. Deny's Day**, the Patron Saint of France.
10	Th.	Fall planting of fruit trees should be delayed till late Nov. or early Dec.
11	Fr.	Stock up early for Christmas; shipping facilities may be uncertain.
12	Sa.	**Columbus Day.** America discovered 1492.
13	S.	Cyclamen for Christmas should have well developed buds.
14	M.	Ashes, fiber, leaves of trees, or even sawdust, may be used for covering potted bulbs, for rooting.
15	Tu.	Killing frosts may be expected in latitude of New York.
16	W.	Are you planting a few Paperwhites each week?
17	Th.	Get outdoors all you can, this fine weather.
18	Fr.	It is time to pot Roses for early Spring flowering.
19	Sa.	Greenhouse Lettuce requires a rich soil.
20	S.	Remove small amounts of foliage of Tomatoes under glass.
21	M.	Buy your coal as near home as possible, to save transportation.
22	Tu.	Why not have a "Chrysanthemum Day" in your city?
23	W.	Keep the soil of the Carnation benches lightly stirred.
24	Th.	Get your soil for the Winter under cover.
25	Fr.	Bulb planting is now in order; in 8-in. or 10-in. bulb pans.
26	Sa.	Store vegetables grown for Winter now and in Nov. Farmers' Bulletin 879, U. S. Dept. of Agri., Wash., covers the subject.
27	S.	Quercus imbricaria, the Northern Laurel Oak, is very handsome.
28	M.	Keep Calceolarias clean by spraying.
29	Tu.	Are your outdoor tools and implements under cover and in good shape?
30	W.	Why not grow more vegetables in your houses this Fall and Winter?
31	Th.	**Hallowe'en.**

New Moon, 3rd day, 4h. 2m., evening.
First Quarter, 11th day, 11h. 46m., morning.
Full Moon, 18th day, 2h. 33m., morning.
Last Quarter, 25th day, 5h. 25m., morning.

1	Fr.	**All Saints' Day.**
2	Sa.	Enjoy the various 'Mum shows coming on; watch the novelties.
3	S.	The retail grower's houses should be attractive to visitors.
4	M.	For an early Spring crop of Melons under glass start the plants Nov. 1-15.
5	Tu.	
6	W.	Roots of Witloof Chicory to be used later for forcing should be dug before the ground freezes.
7	Th.	Try planting bulbs of Ixias for Easter; they will please your customers; 10 bulbs in a 6-in. pan is about right.
8	Fr.	Late 'Mums often pay better than early ones.
9	Sa.	Fumigating is important now; get the houses clear of pests.
10	S.	Prolong the flowering period of Stevia in a house of 40 degs.
11	M.	**Martinmas**, feast of St. Martin.
12	Tu.	Ericas are fine for Christmas; have a good supply for then.
13	W.	*Florist's Exchange goes to press each Wednesday at noon.*
14	Th.	Are you preparing for Thanksgiving Day and after that for Christmas?
15	Fr.	Pot up table ferns; they are always handy.
16	Sa.	Don't be a stick-in-the-mud; attend the big shows and conventions.
17	S.	E. D. Godfrey is an ideal single 'Mum for Thanksgiving Day.
18	M.	Follow 'Mums with giganteum Lilies for Easter and give more heat.
19	Tu.	Water vegetables in the greenhouse preferably in the morning; little or no water in cloudy weather.
20	W.	Hybrid tea Roses in pots do best over Winter in a dry coldframe.
21	Th.	Poinsettias require an even temperature; 60 degs. is about right.
22	Fr.	Sweet Fern (Comptonia) in masses, makes a pretty effect.
23	Sa.	Force Rhubarb at 55 degs. to 60 degs.
24	S.	Review the past season; note your mistakes and failures. Haven't you much to be thankful for?
25	M.	
26	Tu.	Sow seeds of Pentstemon.
27	W.	Retinosporas of all kinds root freely from December cuttings under glass
28	Th.	**Thanksgiving Day.**
29	Fr.	*St. Andrew.*
30	Sa.	Dwarf Japanese Yew, Jaxus cuspidata brevifolia, is a handsome sort; set cuttings under glass in late Autumn or early Winter.

New Moon, 3rd day, 10h. 19m., morning.
First Quarter, 10th day, 9h. 31m., evening.
Full Moon, 17th day, 2h. 18m., evening.
Last Quarter, 25th day, 1h. 31m., morning.

1	S.	Hill's new Rose Columbia, offered as cut flower in Dec. 1917,
2	M.	Boxwood sold at $9 per crate of 50 lbs. in December, 1916.
3	Tu.	Cypripediums are favorite flowers on the market.
4	W.	The new Rose, Lillian Moore, winner of $1000 prize at San Francisco, introduced to commerce 1916.
5	Th.	**Average temperature** in New York City is 38 degs. F.
6	Fr.	Folders and "business-getters" should be distributed.
7	Sa.	Shrubs for Easter flowering are now potted.
8	S.	Pansies may be had in bloom in partly heated frames or houses.
9	M.	**Florists' Exchange established in 1888.**
10	Tu.	Chorizema cordata splendens can be had in bloom at Christmas.
11	W.	Irises and Anemones on wholesale market.
12	Th.	Average temperature now 35 degs. F.
13	Fr.	Good early blooming Azaleas: Deutsche Perle, white; Silas Mardner, rose and white; Mme. Petrick, rich pink. These can be had in bloom shortly.
14	Sa	
15	S.	
16	M.	Heaviest snowfall since 1893 occurred on Dec. 14, 1916.
17	Tu.	Belated Dutch bulb orders were filled at this period in 1916. In the Spring, bulbous flower stock was superabundant and sold cheaply.
18	W.	
19	Th.	
20	Fr.	Dyed Immortelles are subject to 25% ad valorem import duty.
21	Sa.	Rooted Carnations are now being advertised.
22	S.	**First day of Winter.** Pteris argyrea is a graceful fern.
23	M.	Evergreens are symbolical of everlasting life.
24	Tu.	Early Tulips in pots are offered on the market.
25	W.	Lilac in limited quantity can be obtained.
26	Th.	Anemone Chrysanthemums were in evidence everywhere at the exhibitions of 1916.
27	Fr.	
28	Sa.	**Holy Innocent's Day.** If Holly gets frozen in shipment, place it in a cellar at a temperature of 40 degs. F. and let it thaw out.
29	S.	
30	M.	Watch the seed catalogs for novelties.
30	M.	Get a collection of Cacti; they are interesting.
31	Tu.	A new year opens; what changes it may bring!

Section I

The Round of the Year

Last year we had to open this section with an allusion to the remarkable jump in the cost of merchandise during the year 1916, in every line of business. These costs have steadily risen. Labor costs more because of the scarcity of men owing to the call for the Army and Navy. These conditions are likely to become aggravated in the year before us. The Food Administration department of the Federal Government has tried to regulate the retail price of foods and other merchandise, with more or less success.

Continued Rise in Costs

This was possibly the most serious problem facing the commercial florist, and indeed all who had charge of greenhouses during the Autumn of 1917. Not only had the price of hard coal risen to an average of $8 a ton, but owing to the shortage of freight cars, due to the transportation of troops and munitions, it was difficult to procure supplies, and many growers also refrained from making their purchases until the season was dangerously late, as they hoped that the situation would improve and that prices would fall. To some extent the Government encouraged this hope. As a matter of fact prices showed no decline from Midsummer onward.

The Coal Situation

In November, the Coal Administration intimated that those industries not regarded as necessary to the successful conduct of the war, or the so-called luxury industries, among which flower growers were classed, might summarily have their coal supply curtailed. This added a fresh anxiety to the already over-worried growers. It was hoped that by united action, the growers of the country could prove to the Government the wisdom of allowing florists to have their necessary, even if minimum, quota of coal.

That the war has interfered with the ordinary routine of business has been exemplified also by the difficulties that shippers of perishable stock have experienced in getting rapid transit by express. In October the situation was so serious that a delegation of shippers interviewed the heads of the express companies in New York City. The situation improved thereafter, but the expectation was that at the holiday season further trouble might mature. Many serious losses were experienced by delayed shipments and frozen shipments in the Winter of 1916 and the Spring of the past year. It is safe to say that some thousands of dollars' worth of stock perished.

Express Transportation

Roman Hyacinths, Freesias, Paperwhite Narcissus, etc., from France, came in good time, and were of satisfactory quality. Not so the

"FOOD FOR THOUGHT."

A Cartoon from the "N. Y. World," Spring, 1917, When the Retail Prices of Vegetables Were Exorbitant

Imports from Abroad

Holland shipments of bulbs. First, the Dutch Government interdicted the export of bulbs, and only after earnest representation had been made as to the heavy losses that the seed and bulb trade would experience both in Holland and America, were shipments allowed to come through. They did not arrive until early in October, when two ships, containing over 30,000 cases in the aggregate, arrived without, however, having the invoices for the cargoes. This led to further confusion and the necessary storing of the cases. Thousands of cases were also left upon the piers unclaimed, and there they remained, in some instances for several weeks. No Belgian stock had arrived at the time this Annual went to press, and no shipments were expected.

The Season and the Crops

After a long drawn out Winter and Spring, a rather cool Summer followed, with repeated rains. This was ideal for outdoor vegetable crops, as well as outdoor flowers, and gardens never looked better. This was fortunate, as hundreds of thousands of amateurs and beginners in gardening had broken waste land, while organizations for the cultivation of "war gardens," containing particularly such vegetables as Corn, Potatoes, Tomatoes, and Beans, were active in all parts of the country. It can be said that the season was a good one, and blessed the labors of the gardener. The canning and drying of fruits and vegetables in the Fall was on a scale certainly never before known in the history of this country.

The weather was excessively warm for a brief period in the first week in August, when record temperatures were experienced, and much suffering in cities was endured. The Autumn weather was of a mixed character, being raw and chilly in October and bright and seasonably cold in November.

The aggregate of garden and agricultural crops throughout the country showed an enormous advance over the previous year.

A regrettable feature of the food production movement was the unnecessary plowing up of beautiful lawns on many private estates, and the total elimination of flower gardening on these and other estates. The total returns in vegetables in no way recompensed the owners for what they had sacrificed. Moreover, there was plenty of equally good land at hand in nearly all instances.

Flower Shows

Although festivities and entertainments were very largely curtailed, flower shows were held in most instances, with the elimination of the money prizes, and the proceeds in numerous cases were turned over to the Red Cross Association. Some societies converted their exhibitions mostly into vegetable and fruit shows, making flowers subsidiary. The larger societies carried through their exhibition program as heretofore, and in nearly every instance financial and horticultural success attended them. All the portends point to the holding of flower shows as usual in 1918.

Publicity for Flowers

Undoubtedly the greatest achievement of the past year was the resolution of the members of the Society of American Florists and Ornamental Horticulturists to subscribe a sufficient sum of money to undertake the advertising of flowers in organs that have a nation-wide circulation. The sum of at least $50,000 per year for four years will be expended. Committees have been formed for the different sections of the country, and these are busy getting guarantors and subscribers so that the scheme can be launched at the New Year.

It is the belief of the trade in general that correct advertising can educate the public to the proper regard for flowers, and the place they fill or should fill in the life of the nation, and that as a result the trade will feel an increased demand, and the industry will be demonstrated as one not to be tampered with nor curtailed, even in these times of national stress. The sum of upward of $25,000 had been subscribed by the end of November.

"Gee whiz, Hank! Your dad's a turrible strong guy, ain't he?
"'Betcha! He's gotta be ta be one o' them double soldiers."
"What's that—a double soldier?"
"Why, pop's a home guard an' a home guardener."

Another "N. Y. World" Cartoon, May, 1916, Exemplifying the Spirit of the Times

Florists' Red Letter Days

1918

Jan. 1—New Year's Day.
Feb. 14—St. Valentine's Day.
Mar. 17—St. Patrick's Day.
Mar. 31—Easter Day.
May 12—Mother's Day.
May 30—Memorial Day.
Sept. 7—Jewish New Year.
Oct. 31—Hallowe'en.
Nov. 28—Thanksgiving Day.
Dec. 25—Christmas Day.

Jan. 25—Burns' Birthday.
Jan. 29—McKinley Day.
Feb. 12—Lincoln's Birthday.
Feb. 22—Washington's Birthday.
Sept. 16—Jewish Day of Atonement.
Sept. 21-22 and Sept. 28-29 } Jewish Feast of the Harvest.
Nov. 1—All Saints. Roman Catholic Church decorates graves.

June and October are largely the wedding months. The commencements occur late in the Spring or early Summer. The Autumn and early Winter months are sacred to the débutantes, which is also the football season, when many notable games are played, calling for quantities of flowers on those days. Fall openings in the dry goods stores and various automobile and similar exhibitions through the year cause demand for flowers and plants.

During the fiscal year 1916, there were distributed on congressional and miscellaneous requests, 12,417,972 packages of vegetable seed, and 3,754,870 packages of flower seed, or a total of 16,172,842 packages, each containing five packets of different kinds. There were also distributed 14,202 packages of lawn grass seed, 819 packets of tobacco seed, 10,364 boxes of Narcissus and Tulip bulbs, and 96,000 Strawberry plants, comprising 16 varieties.

British nurserymen and florists had a large meeting in London early in the year and petitioned the Government to take all necessary steps to safeguard British horticulture from being undersold with

Where Vegetables Replaced Flowers; One of Many Instances Throughout the Country

products of foreign origin, in the event of a general commercial import tariff being adopted.

The Bureau of Soils at Washington, D. C., in 1916 mapped in detail the various soils of 24,749,440 acres in 75 areas in 32 States.

For correcting soil acidity, 1 ton of burned lime is practically equal to 1½ tons of slaked lime or 2 tons of ground limestone, in case all three forms are of equal grade of purity.

In 1904 the actual cash road and bridge expenditure in the United States averaged slightly less than $28 per mile of rural roads. In 1915 the cash road and bridge expenditure had increased to an average of $109 per mile of road.

War shrines have become a feature of all parts of London and of

other of the English as well as Scottish cities. These are kept decorated with flowers, and a demand has thus been created for the cheaper flowers, particularly by the poor people.

In the European countries there is a demand for light machinery. Tree lifting machines are being sought, particularly the kinds used in France by such firms as Barbier & Co. of Orleans. We gather that these machines are of two types, one for lifting trees for sale, which is fitted with a rubber-lined clamp for gripping the stem of the tree, while the other snatches the tree out of the ground without regard to bruising the stem. The latter is, of course, for use only in cases where

VEGETABLE SWELLS TRAVEL DE LUXE

SUGGESTED BY ANNOUNCEMENT THAT A TRAINLOAD OF POTATOES, WITH PRIVATE BODYGUARDS, IS COMING IN POMP TO CHICAGO.

[By a staff artist of The Daily News.]

THE potato Pullman is en route to Chicago. Twenty-five thousand dollars worth of the vegetable is touring from Ault Eaton and Lucerne, Col., to Chicago and eastern centers. The load fills forty-five cars and the potatoes are under special guard all the way. They are provided with all the comforts a potato requires to be happy and are solicitously attended. --

Potatoes Were Selling at Eight Cents a Pound!

the trees have stood until they are of no value for transplanting, and it is simply a question of clearing the land in the cheapest and most expeditious manner.

Last Winter the Florists' Telegraph Delivery Association adopted the figure of Mercury carrying a spray of flowers as a poster. The association also issued stickers for use by its members.

No. 1 bulletin of the California Dahlia Society was issued in Dec., 1916.

White Pine blister disease, it is estimated, threatens the destruction of forests valued at $365,000,000.

A notable feature of the flower business on each of the holidays was the amount of telegraphic orders.

The price of Beans, which were a very short crop, was quoted in January at $1 to $1.50 advance over the previous season.

Twenty students were enrolled in the regular major courses in floriculture at the Mass. Agri. College.

Discussion raged for a considerable period in regard to proposed legislation that would prohibit the importation of foreign nursery stock.

A systematic campaign was started in California to eliminate all inferior strains of Grape-fruit. It was also suggested that by bud

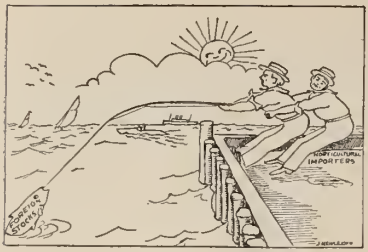
City Man: "Can you suggest any other seeds I shall need for my back yard?"

Never Previously Had Seedsmen Such a Rush as in the Spring of 1917. The "N. Y. Times" Arti t Has Typified the Situation

selection for propagating purposes superior yields of better varieties could be assured.

The New York Florists' Club had on deposit, after paying all accounts at the end of 1916, the sum of $14,638.95.

Grading, packing and standardization in general are the measures suggested in Farmers' Bulletin 707, of the U. S. Dept. of Agri. for improving the market for the sale of Cantaloupes. Some important



WILL THEY LAND IT ?

points covered are use of standard crates where possible, uniformity of size of Melons in crate and necessity of product not being overripe or underripe when placed on the market.

ADVERTISEMENT was given extensively to the work of several nurserymen in California who are ambitious to establish Azalea growing, Bay tree cultivation, and the "Dutch bulb" industry there and on the Northern Pacific Coast. C. W. Ward of Eureka, Cal., was active in this campaign.

ATTENTION was drawn in *The Florists' Exchange* to the lack of any organized uniform system of awarding certificates to plant novelties throughout the country, nor did any of the well established leading societies seemingly have a recognized Floral Committee to award such certificates.

A PLANT called the Tomtato was offered by an English grower. This was no hybrid or cross-bred plant, but simply the result of grafting.

"FIELD NOTES on Sweet Peas" was published in January by C. C. Morse & Co. of San Francisco.

THE PASADENA Rose Tournament on New Year's Day was witnessed by 200,000 visitors. Literally hundreds of thousands of blooms were used from the many gardens of Southern California. It is estimated that the cost of the floats and decorations amounted to $50,000.

E. H. WILSON of the Arnold Arboretum left on Jan. 6 for Korea to collect plants. This was his sixth plant collecting trip to the East.

BY A FIRE near the end of January the Lancaster County Seed Co.'s warehouse was completely destroyed, the loss being estimated at $85,000.

PRICES OF 1917 crops, such as Wheat, Oats, Potatoes, were fixed at the beginning of the year by the British Government as follows: Wheat, 60 shillings per quarter of 504 pounds; Oats, 38s. 6d. per quarter of 336 pounds. Potatoes, in not less than six-ton lots f. o. b., 115 shillings per ton, from Sept. 15 to Jan. 31; 120 shillings for delivery in February and March, and 130 shillings other times.

A TOTAL of 404,967,582 copies of publications of all kinds have been issued by the United States Department of Agriculture during the fiscal years 1890 to 1916, inclusive.

THE FARMERS' Non-partisan League of North Dakota, having a majority in the Legislature of that State, intend to get what they want. We note one of the things they intend to have is State hail insurance.

"THE GARDEN GUIDE," the amateur gardeners' handbook, which has had a large sale, was published March 15 by the A. T. De La Mare Co., Inc.

THE FUNERAL of Admiral Dewey of the U. S. Navy, toward the end

of Jan., 1917, called for many designs from the florists at Washington, and also at San Francisco where he was buried.

The Ohio State Horticultural Society celebrated its 50th anniversary on Jan. 30, 1917.

According to Associated Press news, armed guards were stationed on freight trains carrying seed Potatoes through the Middle West to Chicago in Jan., 1917. This was because of the high value set upon Potatoes at that period.

A new kind of sheet glass in which transparent celluloid was placed between two pieces of glass and welded under high pressure, and said to be unbreakable, was put on the market.

The dissemination of information regarding how to prevent fires, and analysis of the total number of fires and their origin, was published by the U. S. Board of Fire Underwriters. Carelessness in throwing away cigarettes, knocking ashes from pipes, throwing away matches, crackers, etc., defective chimneys and such like, caused damage to the amount of $4,358,680. Thirty-one per cent. of fires were due to sparks, explosions, incendiarism, while well over half a million dollars worth of damage was said to have been caused by fires of spontaneous combustion.

Dorothy Perkins, daughter of Mr. and Mrs. Geo. C. Perkins, Newark, N. Y., after whom the Rose is named, was married on Jan. 27.

The question "What Constitutes an Amateur?" was much debated in the trade papers without a solution being arrived at.

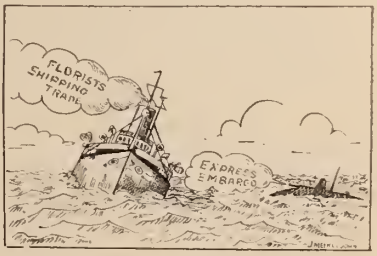
A new Potato disease, the symptoms of which were curling and browning of the leaves, was investigated by the U. S. Dept. of Agriculture last season.

On Feb. 5, 1917, the legal title of the owners of the Gardeners and Florists' Annual, the A. T. De La Mare Co., Inc., became effective. Previously it was the A. T. De La Mare Printing and Publishing Co., Ltd.

The new orange-red hybrid tea Rose Mme. Collette Martinette is well spoken of.

The Association of Dutch Bulb Growers, at their annual meeting in 1916, reported that trade had been more favorable than in the two previous years.

The temperature touched zero in New York, Feb. 12. At places in the South and Middle West a great, sudden change in the temperature took place about Feb. 3. The temperature at 4 p.m. one day recorded 75 deg. In 39½ hours the thermometer dropped 56 deg., about 1½ deg. per hour. Records show that this is the greatest change that has occurred since the Weather Bureau went into operation.



CRIPPLED

THE Morningview Greenhouses, at Montgomery, Ala., owing to an accident to their boiler, last Winter, lost over 15,000 plants valued at $800, besides all their decorative palms, which were being used in a decoration at an Episcopal church and which were frozen by reason of the sexton failing to keep up the fires as agreed.

THE Florists' Hail Association had its corporate existence extended for another 30 years by the New Jersey Legislature in February.

THE annual meeting of the Tennessee State Florists' Ass'n was held at Nashville, on Jan. 30, more than 60 being in attendance.

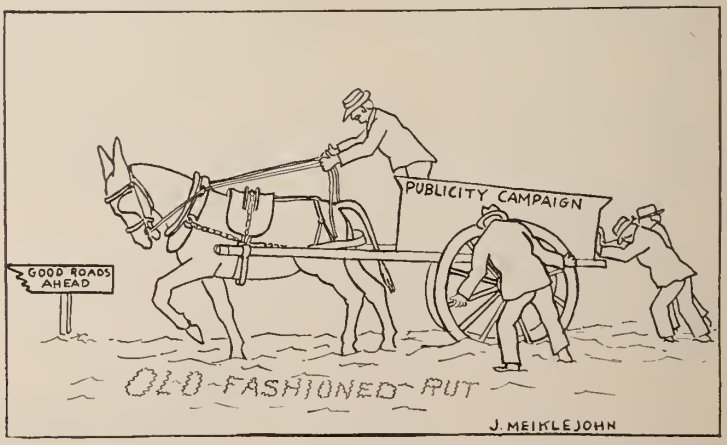
A SEVERE and sudden frost extending far down into Florida started on Friday night, Feb. 2, 1917, causing the loss of several millions of dollars to the Grapefruit and Orange growers, as well as to all those who had florists' crops for shipping. The Asparagus plumosus consignments were entirely cut off, and the market throughout the whole country was left short of this for many weeks. Young vegetable crops were also ruined, as well as all the tender ornamental plants, even up to the height of 50ft. in the case of Rubber trees.

THE Chrysanthemum Society of America published on Feb. 17, in the trade papers, a full list of certified novelties of season 1916, these numbering 40.

A PAMPHLET on gardening in elementary city schools was published by the U. S. Bureau of Education early in the year.

THE coal companies urged last February that contracts for a year ahead be signed at prices exactly twice the amount of those of 1916.

IT WAS reported from Cornell that 25 species of American birds



Doing Their Bit

See Notes on the S. A. F. Publicity Campaign for Flowers, Page 19

August 1914, Until ——

and animals have become extinct within the memory of persons now living.

The annual meeting of the New Jersey Association of Nurserymen was held at New Brunswick on Feb. 14.

The sixth annual convention of the New England Nurserymen's Association was held at New Haven, Conn., on Jan. 30.

Special prizes are to be offered for good gardens in the next five years, 1918-1922, offered and arranged for by the Mass. Horticultural Society.

St. Valentine's business was reported as the heaviest ever known at Chicago; stock in general was scarce and cleared up at remarkably good prices. A shipment of 201,000 Violets intended for St. Valentine's Day arrived in a badly frozen condition. Throughout the Middle West dealers reported that business was the heaviest on record. Many telegraphic orders were received. Had the weather been warmer considerably more business, it was felt, would have been done.

St. Patrick's Day business was almost a failure owing to the extremely cold, wet weather.

Philadelphia plant growers raised the price of plants 25 per cent. at Easter.

A lessening supply of stable manure attracted attention to new humus materials.

The amount of advertising done by florists in general magazines and daily and weekly newspapers was very extensive in March.

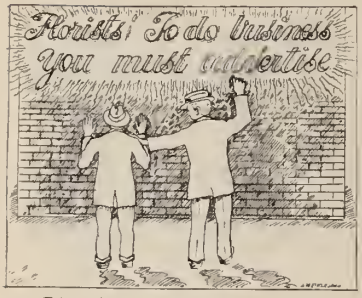
The American Fruit and Vegetable Growers' Ass'n, with headquarters in Chicago, was organized in February.

The Ohio Nurserymen's Ass'n held its tenth annual meeting on Feb. 1.

The fight was renewed by the Ohio florists against the licensed fireman law, back of which were the Firemen's Union who tried to have the law enforced as regards all florists.

New York State Vegetable Growers' Ass'n held its seventh annual meeting at Ithaca, Feb. 13, 14 and 15.

The Japanese Potato king, George Shima of Berkeley, Cal., had



THE HANDWRITING ON THE WALL

a crop of 2½ million bushels of Potatoes in 1916, and the retail price in March, 1917, was $4 a bushel.

Spinach seed advanced from 7½c. per pound on contract, to 50c.

Contract price on coal from the Virginia mines to Massachusetts in 1915 was $1.40 per ton; a year later it was $4.10.

A remarkable instance of successful cross pollination of a Rose was illustrated in *The Florists' Exchange,* March 10, page 559.

It was estimated that the losses caused by tree and plant pests amounted to five million dollars annually.

Polish speaking florists and gardeners organized a club in Chicago on Feb. 18, with a membership of over 20.

A remarkably fine roof garden was shown in *The Florists' Exchange* March 17, page 593.

The annual meeting of the Illinois State Florists' Ass'n was held March 7.

The Dept of Horticulture, University of Minnesota, collects portraits of eminent floriculturists and horticulturists and has these framed and hung in the class rooms.

Novelty exhibitions became popular with the Chicago Florists' Club, several successful ones being held.

Shamrock plants grown in small condensed milk cans painted green, and mailed out in wooden boxes by J. F. Rupp, Shiremanstown, Pa., were a feature for St. Patrick's Day.

A destructive cyclone struck New Castle, Ind., on March 11, when the establishments of F. J. Benthey and P. J. Lynch were made a total wreck, the losses being put at $150,000.

Both the Chelsea and Holland House shows of the Royal Horticultural Society were abandoned owing to shortage of labor and difficulties of transport.

The College of Agriculture at Columbus, Ohio, produced a motion picture film illustrating seed corn testing, which it will loan free for use in local motion picture theaters to communities desiring it. Several other films along the same lines are available.

The School Nature League is the name of a new society for the furtherance of school gardening. The secretary is Mrs. S. W. Weiss, 44 W. 86th st., New York.

Ruhleben, the German camp for British prisoners near Berlin, has a full-fledged horticultural society with course of lectures. The secretary is T. Howat, Ruhleben Horticultural Society, Bar 5, Box 15.

The markets were glutted with flowers of all varieties in the middle of March.

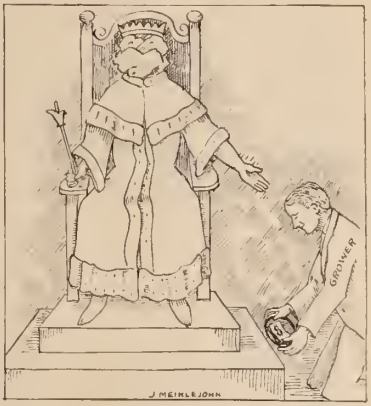
The following points for judging flower groups at the New York

show were used: Accessories, 10; rarity, 10; cultural perfection, 15; arrangement, 40; quality of flowers, 15; foliage, 10; total, 100.

A floricultural society was formed by the employees of the A. N. Pierson, Inc. A boarding house and recreation hall were also built.

The glass situation was acute in the Spring, owing to the demand for soda ash from which caustic soda, the chief component of glass is got.

Virginia, North Carolina, South Carolina, Florida, Alabama, and Texas comprise the early Potato sections of the South. The increased acreage planted was 27,000. Potatoes require a cool, moist Summer climate.



Old King Coal
is a Merciless Old Soul

The Chrysanthemum midge or fly, introduced about 1915, has been attracting serious attention.

The American Sweet Pea Society published a 24-page bulletin in the Spring.

Two bulletins on Gladiolus studies from Cornell, were among the most important publications of the year.

During the year a fertilizer plant was erected by the Federal Government under the Department of Agriculture on the Southern Pacific Coast to experiment with the problem of extracting potash from kelp. The appropriation made for this was $175,000. Two hundred tons of seaweed per day were cut and treated.

The Seed Analysts' convention was held in New York at the end of December.

In the Winter 1916-1917 there was a great shortage of Manetti Rose stocks.

Lilium regale was offered in 1917 for the first time. It has been called the finest commercial species in cultivation.

A large Eastern States Exposition was held at Springfield, Mass., Oct. 12-20. Flowers, fruits and vegetables were shown in connection therewith.

Advertising for membership was adopted for the first time in its history by the Horticultural Trades' Association of Great Britain and Ireland.

The second annual banquet and reunion of the Association of Kew Gardeners in America, was held in New York on March 16. The same officers were re-elected.

Nearly $1000 was offered at the American Gladiolus Society's show in August, as prizes, exclusive of cups and other trophies.

Postal service between U. S. and Germany was suspended in April.

Easter business was good all over the country, in some places as much as 50 per cent. increase.

Teaching by cinematograph was a method proposed by a New York lecturer on gardening.

Packing two or more varieties of seed of a given vegetable in separate envelopes enclosed in one larger envelope, was the plan adopted by a large seed house in New York State last year.

A reprint of the official code of standardized plant names was published at the instance of the American Nursery Association in April, 1917.

Severe hailstorms did much damage in Texas in April.

An account of the rise of the retail florists' business in San Francisco appeared in *The Florists' Exchange* for April 21.

Detroit florists undertook a campaign advertising early buying of stock at Easter. They also had a co-operative scheme of advertising for Mother's Day and Memorial Day.

After Easter the sale of cut flowers and plants was abnormally small. With this there were steady complaints of the high cost of doing business everywhere.

The sixth and last volume of the *Standard Cyclopedia of Horticulture* was published in April.

Members of the British Wholesale Florists' Federation, established early in the year, pledged themselves to devote at least 50 per cent. of their open ground for food production.

With impressive ceremonies, representatives of the National Ass'n of Gardeners planted an English Yew near the tomb of George Washington at Mt. Vernon, on April 23, which is St. George's Day and Shakespeare's birthday.

The English gardening papers doubled the price of their subscriptions in April.

The new laboratory building and plant houses of the Brooklyn Botanical Gardens, Brooklyn, N. Y., were opened on April 19.

In place of raffia for the tying of plants, a soft tying material at 16c a pound was used as a substitute in England, as the Government there has commandeered raffia.

Municipalities and large employing concerns were active in promoting gardening and garden societies in all parts of this country in the Spring. "Byg" was coined as a word representing Back Yard Garden. At Boston an old law prohibiting Sunday gardening was repealed. As an example of the trade done in seeds, Peter Henderson & Co., New York, intimated that they had 7000 purchasers in their store on Saturday, April 21.

A committee on seed stocks was appointed by the Secretary of Agriculture in May to consider the quantities of seeds available, and the price.

Cartoon by Briggs in the "N. Y. Tribune"

Among the movements to secure money for the purchase of seeds for farmers was one at Baltimore, whereby a fund of $10,000 was raised.

More American flags in carpet bedding were planted last Spring than for many years past.

C. L. Brock, Supt. of Parks at Houston, Texas, was appointed Chief of Police of that city.

Mother's Day business, 1917, was the largest on record. Owing to dull weather previously, the supply had been reduced 50 per cent., so that prices considerably advanced. There was also a large amount of advertising done, both individual, co-operative and National. The latter was in the form of a page advertisement in the *Literary Digest* for May 5, paid for from the profits arising from the sale of stamps and pasters issued by the Chicago Florists' Club. A committee of that club, under the chairmanship of Fred Lautenschlager, carried through this first piece of National advertising of flowers.

Bertermann Bros. Co. of Indianapolis, took over the retail store interests of the E. G. Hill Floral Co., in Indianapolis in April.

The telegraph business in flowers at the great floral holidays showed a steady increase. Accounts after Christmas, St. Valentine's Day, Easter, Mother's Day, proved this.

Among the co-operative forms of advertisement within the year was that of the U. S. Florists, comprising a number of leading retailers throughout the country, who subscribed to a central fund and advertised flowers in magazines with a large circulation.

Elderly near-sighted gentlemen (mistaking florist's shop for carpenter's shop next door) I would like you to make me a swinging door.

Florist. So.ry sir, that I can't accommodate you. But I can make you a "gates ajar."

The Book of the Peony, by Mrs. Harding, was issued early in the year. It is the most complete work on this flower to date.

The leading florists of Binghamton, N. Y., formed an association for social and business purposes.

The weather in April was cold in most parts of the country. The same might be said of the month of May, which was raw, chilly and sunless generally. At the end of May the season was computed to be 15 to 20 days late.

Roof gardening has recently shown signs of development. Each large new building, particularly hotel buildings, in New York and other cities has had provision made for a roof garden. It is a feature worthy of encouragement.

A number of flower shows were cancelled as a result of the declaration of war. The one on which most preparation had been expended was the Pittsburgh Flower Show.

Nandina domestica, the Heavenly Bamboo of the Chinese, has been mentioned as a likely subject for pot cultivation.

W. J. Palmer & Son, Buffalo, N. Y., opened a very elaborate flower store and conservatory in the Spring, one of the handsomest in this country.

So busy were many of the seed stores during the Spring that it was a practice with some to close on one or two afternoons each week.

Through the Women's Department of the State of New York Department of Labor, trained women and others willing to work in floral establishments and in nurseries were registered, and made available to take the place of men drafted into the army.

A frost on May 8 injured a large area of the Strawberry section in Southwestern Missouri. The acreage is 6950 acres.

Fruit exports from the United States during 1915, according to U. S. Dept. of Agriculture statistics, were valued at $34,229,906. The values of the principal fruits exported were: Apples (dried, green, or ripe), $11,358,124; Apricots, dried, $2,241,061; Oranges, $3,851,013; Prunes, $3,274,197; and Raisins and other dried Grapes $1,718,547.

British nurserymen have a proposal before them to grow forest trees from seed an dsell the product at a fixed rate in two or more years' time.

Military vegetable gardens to the number of 5622 maintained at various posts, hospitals and supply depots in France greatly alleviated the shortage of vegetables in 1916, their total production being 13,000,000 francs.

The largest amount of money expended by Massachusetts for the elimination of the gypsy moth in any one year was $200,000. Since 1905, when active work was resumed, Massachusetts has been expending over half a million dollars a year in its battle against the pest.

The new Concord Australian Sweet Peas were well shown at the New York exhibition in March.

The imports of bulbs from Holland to the United States in 1916 showed a marked increase. Prices were high, yet they were not really satisfactory when compared with the cost of production and freightage. It is said that at least 4,400,000 lbs. of bulbs were sold at prices below cost at the end of the season.

Plans were published for an expansion to the greenhouse of the University of Michigan at Ann Arbor. These gave details of a magnificent range of glass.

Numerous American flags in bedding design were planted in the early Spring and Summer.

Among side lines for retailers the following have been suggested: Bird houses, garden furniture, garden ornaments, bird baths, gazing globes, stone seats, sundials, fancy fish in aquariums, bird nesting boxes, aviaries, Japanese dwarf trees, dwarf Cacti, garden books.

The American Peony Society published Bulletin No. 4 in May.

"Tales of a Traveller," being the account of his 28 years' experience on the road, by S. S. Skidelsky, was published in May.

WAITING FOR THE FLORISTS EXCHANGE

A show, partly outdoors and partly under canvas, was held in June at Boston, Mass. While not a financial success it betokened much enterprise on behalf of the Mass. Hort. Soc. There were large groups out of doors, rock gardens, water pools with Rose gardens, orchid groups and Rhododendrons.

Several bulletins on Gladiolus Studies were published from Cornell University under the authorship of Prof. A. C. Hottes and Dr. A. C. Beal. These were most carefully prepared.

The seed trade had an unprecedented season's business, many times larger than in previous years. Both in Europe and America the trade was hampered on account of shortages in certain lines, particularly Potatoes, Onions and Beans.

Winter blooming Irises and Anemones were on the New York market in the middle of December.

The American Forestry Association held an International Forestry Conference at Washington, D. C., Jan. 18 and 19, 1917.

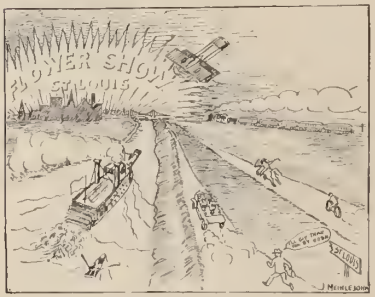
A grower advocated the use of wax paper in packing Geranium cuttings for shipment rather than damp newspaper, which heats he says. He also uses excelsior between tops to keep them apart.

A sharp frost that did considerable damage throughout Michigan, Indiana and Minnesota, occurred on June 15.

Market prices for coal in June were $6.50 to $8.50 per ton.

Shifting trees in Midsummer was described in illustrated articles in The Florists' Exchange June 30th and July 14th.

Dr. Wm. Van Fleet was presented with a gold flag emblem by the American Rose Society in recognition of the work he had accomplished in the raising of new seedling Roses of merit.



The Fifth

National Flower Show

Will be Held at

St. Louis, Mo.

April 6 to 15, 1918

Owing to the increased cost of living many business firms gave their employees substantial bonuses at Christmas, while some made permanent advances to the weekly wages.

Pussy Willow was in the market the end of November.

Holly berries dropped badly in Delaware, from which section so much Holly comes.

Municipal gardening is steadily on the increase. New greenhouses have been erected in parks in many of the larger cities, while planting of shade trees and of plants and bulbs for decorative effect has been widely undertaken.

A distinct tendency has been shown during the year for florists to take up vegetable growing under glass as a catch crop or side crop, while the indoor cultivation of vegetables by market gardeners has developed very considerably.

A new disease of Poplars was announced by the Government pathologists.

The Geo. Robt. White Medal of Honor awarded by the Mass. Hort. Soc. for eminent service in horticulture, was bestowed upon Wm. Robinson, the well-known English writer and exponent of hardy flower gardening.

Physicians at the Battle Creek Sanitarium, Michigan, prescribe flowers for their patients just the same as they would order a massage or an application of electricity. The influence of flowers in lightening sorrow and suffering has always been recognized, but their employment as an actual remedy is recent.

Missouri adopted the wild Crab Apple blossom as its State flower.

The farmers of the State of Missouri are said to be spending at the rate of $25,000,000 a year on buildings.

The city of Kalamazoo, Mich., established a municipal coal yard, where coal was sold to consumers at cost.

Group insurance of employees is a new thing. It was adopted by the A. N. Pierson Co., early in the year.

A stoppage of the service of outgoing mail to many foreign countries, including Germany, Austria, Hungary, Luxemburg, Bulgaria, Servia, Montenegro and Turkey also parcel post to Belgium, Netherlands, Norway, Sweden and Denmark was announced in Midsummer.

A national arboretum was one of the things suggested in the annual

A Large Percentage of Fire Losses Are Preventable — Seek Out the Cause of Fires But Take Precaution Against Their Occurrence

address of John Watson, president of the American Ass'n of Nurserymen, at Philadelphia in June.

A new label for express shipments was instituted as the result of the activities of Max Schling, the New York florist, in collaboration with the heads of the express companies. This label can be bought in quantities through Max Schling.

A short history of the House of Vilmorin, seed merchants of Paris, appeared in the August, 1917, issue of the "Journal of Heredity."

The thirty-first annual convention of the American Cemetery Superintendents, was held at Barre, Vt., on Aug. 28-31. W. N. Rudd of Chicago was elected president, and W. B. Jones, superintendent Hollywood Cemetery, Pittsburgh, Pa., re-elected secretary, and Wm. H. Atkinson, Riverview Cemetery, Princeton, N. J., vice-president.

The *New Country Life* for June was largely devoted to Dahlias, and eight pages were devoted to Dahlia flowers in color.

A very destructive hail storm occurred in New England Aug. 20, doing much damage to crops and greenhouses.

Seed imports for June, 1917, totaled $4,093,805. Plant imports totaled $41,009. We exported during June seeds to the value of $270,755, as against $88,525 the previous year.

The annual meeting of the New York State Federation of Horticultural Societies and Floral Clubs was held at Syracuse, Sept. 12. President F. R. Pierson, Secretary E. A. White, and Treasurer W. A. Adams of Buffalo, were re-elected. The funds on hands are $215.80. It was reported that plans are under way for erection of a horticultural building on the State Fair Grounds, Syracuse. It is hoped this building would be ready for the next show.

A. G. Hecht was appointed head of the Department of Floriculture, Amherst College, Mass., at the end of July.

Pennock-Meehan Co. dissolved partnership July 1. S. S. Pennock formed the S. S. Pennock Co., Chas. Meehan going into business for himself.

A new edition of the famous "Johnson's Gardeners' Dictionary," of which the De La Mare Co. has the American publishing rights, was published in July.

A. N. Pierson, Inc., Cromwell, Conn., who usually employ 500 men, were 100 short in November.

The new dwarf Solanum Cleveland, was offered in the Fall.

In connection with the Galesburg (Ill.) flower show, 1500 Chrysanthemum plants were given away to the boys and girls to grow on.

Several new varieties of Delphinium hybrids of the Belladonna type were shown by F. W. Fletcher & Co., at Boston.

Mother's Day was voted as a day to be recognized nationally by the Order of Elks at their Boston convention.

The first of a series of practical lessons in floral designing in The Florists' Exchange appeared July 28.

Extensions and improvements at the New York Botanical Garden, Bronx Park, called for the expenditure of over $500,000.

A memorial garden to take the place of the old Croton reservoir in Central Park, New York, was proposed.

Circular No. 72 of the N. J. Agri. Exp. Sta., New Brunswick, N. J., dealt with "The Seed Situation."

The addition of fish-oil to Bordeaux mixture was said to aid in the control of Tomato leaf spot.

The convention number of The Florists' Exchange, Aug. 11, contained portraits of a large number of leading New York seedsmen and florists.

Primula malacoides Townsendi, a valuable new commercial form, was put on the market.

The volume of cut flower business in August in most sections exceeded all previous records.

The names of large numbers of florists and seedsmen who had joined the U. S. Army and Navy appeared in the trade papers during the Summer and Fall.

A destructive hail storm occurred in September in Virginia.

The American Association of Park Superintendents held its 19th annual convention in St. Louis, Mo., on Sept. 11-13.

The second annual flower show was held at Denver, Col., Oct. 24-26.

A report on investigations into Rose diseases by Dr. L. M. Massey of Cornell University, on behalf of the American Rose Society, was published.

Business at Memorial Day was highly satisfactory throughout the whole of the East, in California and the Pacific Northwest; in the Central West rain interfered with sales.

An illustration appears in the English *Gardeners' Chronicle* for May 5th of a hybrid between a Savoy Cabbage and a Brussels Sprout, showing Sprouts on the stem and the head of a Cabbage at the apex.

On June 8, 1917, initial action was taken for the extension of the corporate existence of the Florists' Hail Association, for another 30

THE FLOWER SHOW, THROUGH ARTISTIC EYES : *By Dennis*

A Cartoon from the "Boston Traveler"

years under the terms of the laws of New Jersey. A new set of by-laws drawn by J. A. Valentine of Denver, Col., improved and puts in legal form the by-laws used for the past 30 years.

The Wholesale Cut Flower and Allied Trade Association of Greater New York agreed to close on Sundays after June 30, 1917.

On June 5th Western Maryland was struck by a severe hailstorm which did serious damage to greenhouses, also causing floods. It was the worst in the Cumberland Valley for 33 years. Henry Bester & Sons had damage done to the extent of $25,000.

The coal situation was under investigation by the Government in June and July.

An Iris exhibition was held by the New Haven (Conn.) Horticultural Society on June 15th and 16th.

June 14th was celebrated as Flag Day.

Horticultural Hall, Philadelphia, was finally sold for a sum of about $550,000 in June.

Women became more noticeably a factor in the florists' business during the year, owing to changes brought about by the war.

The Federal Child Labor Law which became effective Sept. 1, was, in the opinion of Curtis Nye Smith, not applicable to the seed or nursery trades.

An increased demand for evergreens for window boxes for Winter was experienced.

The wholesale commission flower salesmen of New York City agreed, in October, to close their stores wholly every Sunday.

A new machine soil mixer was offered by the Kasting Co., of Buffalo, N. Y.

A new dwarf form of Berberis Thunbergii, called the Box-Barberry, was introduced by the Elm City Nursery Co., of New Haven, Conn.

Nanz & Neuner Co., of Louisville, Ky., showed a stand of blue ribbons that it had won during the 60 years of exhibiting at the State shows.

The newly consolidated Dahlia Society of California held several successful exhibitions in San Francisco in the Fall.

The front page of the *Ladies' Home Journal* for November had a colored picture showing a military wedding, with church decorations by the Hollywood Gardens, Seattle. It was a remarkable advertisement for floral decorations.

The 50th anniversary of the completion of Prospect Park, Brooklyn, N. Y., was celebrated on Oct. 20.

The Horticultural Hall, Philadelphia, was sold and taken possession of Aug. 1.

A contest for an artistic emblem for the F. T. D. was opened in November.

Some of the seed houses adopted the cental system of cataloging and selling seeds; that is, by the pound weight.

Section II

The National Societies

American Ass'n of Nurserymen

The forty-second annual convention was held at Philadelphia, June 27th to 29th. Much serious business was discussed, and very little entertainment was indulged in. There was a get-together dinner on the first evening, which was well attended.

The officers elected for 1917-18 were: President, Lloyd C. Stark, of Louisiana, Mo.; vice-president, J. R. Mayhew, Waxahachie, Texas; treasurer, J. W. Hill, Des Moines, Ia. The secretary and counsel is Curtis Nye Smith, 19 Congress st., Boston, Mass.

The place of meeting for 1918 was left to the executive committee. Chicago was chosen.

President John Watson in his address suggested the establishment of a National Arboretum. Secondly, that the committee to confer with the landscape architects be continued, and that a committee on complaints and grievances (i. e., as to payments and credits) be appointed.

The treasurer's report showed a balance of $5361.07.

The secretary suggested the establishment of an annual budget, and a committee to consider appropriations before they were placed before the annual convention. An appeal was made to help French nurserymen repair their orchards and nurseries. The convention also went on record to help the Government carry the war to a successful conclusion.

The committee on nomenclature reported the publication of a Finding List of Binomials, a list of plant names for adoption by the trade.

The committee on interstate commerce reported having attended a meeting at Washington at which the railroads had applied for a 15 per cent. increase in freight rates, which had been granted. The committee was continued for another year.

The committee on hail insurance made a report, but no action was taken. The committees on arbitration and on standardization each reported.

A committee was appointed to go into the question, "When are Evergreens, If Ever, Dormant?" which was brought up in a paper read by J. B. Baker of Fort Worth, Texas, upon the answer to which depend certain freight charges. Other papers were read.

The committee on legislation reported the efforts that had been made to defeat the attempt to exclude all foreign nursery stock. They also reported on the conference held with the Federal Horticultural Board regarding the expansion of quarantine powers asked for by the latter.

No quarantine or other radical action is likely to be taken without proper consultation with the nursery interests.

The fight in regard to the Western quarantine law on White Pine blister rust was reported as disappointing, but there was a hope that it may be amended. It was thought possible before next shipping season to remove some of the existing State quarantine orders.

The transportation committee reported the increase of 15 per cent. advance demanded by carriers or shippers; said advance on top of the 5 per cent., and the change in the classification (about 17 per cent.), making a total of 37 per cent., strikes the nurserymen, especially those in official classification territory, as being more than they can stand. The carriers claim that nursery stock is a perishable product and not entitled to the low rate that prevailed prior to the change in the classification. Should the 15 per cent. be allowed we will state that the rate on a minimum car of nursery stock from New York to the Mississippi River, about 1000 miles, will be $80, and from St. Louis to Texas points, average about 1000 miles, it will be $128.80.

The committee mentioned that the Southern railroads are endeavoring to substitute the Southern classification for the larger classification, which would increase the rates from 50 per cent. to 240 per cent. Some Western nurserymen desired the railroads to allow Strawberry plants to be shipped in the same boxes or bundles with trees. It was thought this was not practicable.

American Carnation Society

The twenty-sixth annual convention and exhibition was held in the Claypool Hotel, Indianapolis, Ind., on Wednesday, Jan. 31, and Thursday, Feb. 1, 1917, President J. F. Ammann presiding.

The officers elected for 1918 were: President, W. J. Vesey, Jr., Fort Wayne, Ind.; vice-president, Chas. S. Strout, Biddeford, Me.; secretary, A. F. J. Baur, Indianapolis; treasurer, F. E. Dorner, La Fayette, Ind. Boston was chosen as the next place of meeting.

The convention was very largely attended by growers from Chicago and further west, St. Louis, Cleveland, Pittsburgh, Cincinnati, Buffalo, Boston, New York and other places. The show was a good one.

Among the chief prize winners were Cottage Gardens Co., Queens, L. I.; F. Dorner & Sons Co., La Fayette, Ind.; J. D. Thompson Carnation Co., Joliet, Ill.; Baur & Steinkamp, Indianapolis; Bassett & Washburn, Chicago; S. J. Goddard, Framingham, Mass.; W. Frank & Sons; Portland, Ind.; Chas. Strout, Biddeford, Me.; Gullett & Sons, Lincoln, Neb.; Hartje & Elder, Indianapolis.

Baur & Steinkamp won a silver medal for the best vase of 100 blooms of any variety with their Merry Christmas, scarlet; and Cottage Gardens Co. won the bronze medal with Cottage Maid. There were no awards made for undisseminated varieties of American origin. The Dorner Co. won the Dorner Memorial Medal with Laddie, light pink.

In the competition for the Dorner medal for 1918, Baur & Steinkamp were awarded a preliminary certificate for Seedling 414, rich pink; and to Nic Zweifel with Edna, scarlet. Certificate of merit was awarded to W. D. Howard, Milford, Conn., for Bernice, crimson, scoring 85 points, and to Nic Zweifel with Edna, scoring 86 points.

The secretary reported 324 members in good standing, of which 217 were also members of the S. A. F.

Several new varieties had been received for registration, and 14 others were sent over by the Perpetual Flowering Carnation Society of England.

During the year a special silver medal had been struck to commemorate the society's 25th anniversary. The society had taken an active part in the National Flower Show at Philadelphia in March, 1916, the members contributing $515 toward premiums, also silver and bronze medals. The sum of $154 was raised by the society on behalf of the Mother's Day Ass'n.

The treasurer reported having received $2021.63 during the year, with payments of $1205.34. The permanent fund at Jan. 20, 1917, was $2731.35, and the Dorner Memorial fund $1042.49.

American Dahlia Society

The third annual meeting and exhibition was held in conjunction with the American Institute in the Engineering Bldg., West 29th st., New York, Sept. 25-27.

Despite a trying season, an early frost on Sept. 10, and cold and dry weather, there was a good show. Twenty-eight seedlings were exhibited and seven preliminary certificates were recommended.

There were decorative displays from Burpee & Co., Mrs. O. P. Chapman, F. R. Austin, Mills, and Vincent, as well as other displays from commercial growers.

The officers were re-elected, namely, president, Richard Vincent, Jr., White Marsh, Md.; secretary, J. H. Dick, 1426 73d st., Brooklyn, N. Y.; treasurer, F. R. Austin, Tuckerton, N. J. A change was made in the vice-presidents to include Maj. N. F. Vanderbilt, San Rafael, Cal., who now represents the Pacific Coast.

There were 325 entries in 86 classes. Among the chief prize winners were W. D. Hathaway, New Bedford, Mass.; J. H. Slocombe, New

Haven, Conn.; N. Harold Cottam & Son, Wappinger Falls; C. Louis Alling, New Haven, Conn.; A. E. Doty, New Haven, Conn.; F. R. Austin, Tuckerton, N. J.; P. W. Popp, Mamaroneck, N. Y.; Leonard & Weber, Trenton, N. J., and Mills & Co., Mamaroneck, N. Y.

Among the outstanding varieties besides those certificated were Jean Kerr, Mrs. F. Grinnell, Sunshine, Mrs. Pfister, King of the Autumn, Dahliadel, white century; Tango, scarlet century; Gracchus, A. D. Livoni, Arabella, Marguerite Bouchon, Delice, Sweetheart, as well as a representative selection of the older varieties. The membership stood at 273, and the balance in the treasurer's hands was $466.15.

American Gladiolus Society

The annual meeting and exhibition were held at the Botanical Museum Building, Bronx Park, New York City, during the S. A. F. convention. The show lasted from Aug. 21 to 26; the meeting took place on Aug. 24, Pres. T. A. Havemeyer presiding.

The show, while not as large as some of those of previous years, was of excellent quality, but unfortunately it was not as well advertised as it might have been. Many of the well-known Gladiolus growers exhibited. A feature of the exhibition was the prize-winning group for not less than 250 sq. ft., won by Cedar Acres (B. Hammond Tracy), Wenham, Mass. T. A. Havemeyer, Cedar Hill Nursery, Glen Head, N. Y., won a prize with a new golden yellow, rich and glowing, called Golden Measure, and Thos. Cogger captured a first with a new ruffled variety, Miss Helen Franklin, a creation of A. E. Kunderd, Goshen, Ind. Others who won prizes were John Lewis Child, Inc., Flowerfield, N. Y.; C. Zeestreten, Bemus Pt., N. Y.; John Scheepers & Co., Inc., N. Y. City; Madison Cooper, Calcium, N. Y.; Vaughan's Seed Store, New York and Chicago; Wm. Simms, Cliftondale, Mass., and H. E. Meader, Dover, N. H.

Plans were made to arouse a wider interest in the society and the shows and increase the membership. Prof. A. C. Beal, of the Department of Floriculture, Cornell, spoke on the Gladiolus test gardens. The question of where to hold the next show was taken and it seemed likely that it would be held in a Western city.

The election of officers resulted as follows: President, A. E. Kunderd, Goshen, Ind.; vice-president, H. E. Meader, Dover, N. H.; treasurer, Madison Cooper, Calcium, N. Y., who later became secretary.

College Teachers in the Rose Garden at Cornell

American Peony Society

The fourteenth annual exhibition was held in conjunction with the Pennsylvania Horticultural Society, and the Flower Show Association of the Main Line at Philadelphia, June 13th and 14th in Horticultural Hall.

The season was late, and the show had been put back over a week. There were numerous entries and competition was close.

The officers for 1917-18 were elected as follows: President, Jas. Boyd, Haverford, Pa.; vice-president, A. H. Fewkes, Newton Hills, Mass.; secretary, Prof. A. P. Saunders, Clinton, N. Y.; treasurer, J. H. Humphreys, Chestnut Hill, Pa.

Cleveland was selected as the meeting place for 1918.

The chief prize winners were Jas. Boyd, who swept the boards in both amateur and professional sections; Bertrand H. Farr, Wyomissing, Pa., who ran as the principal second, others being C. B. Newbold, Jenkinstown, Pa., Arthur H. Scott, Oakleigh, Philadelphia, Herbert K. Taylor, Jr., Ogontz, Pa., Elmer K. Schultz, Jenkinstown, Pa., A. P. Saunders, Mrs. Arthur H. Bailey, Harrisburg, Pa., Mrs. J. Leslie Davis, Haverford, Pa., and Capt. J. Franklin McFadden, Rosemount, Pa. Henry F. Michell, and H. A. Dreer, Inc., also had displays.

Blooms of the yellow La Lorraine were shown by Bertrand H. Farr. Among other varieties that commanded attention were La Cygne, probably the largest white in the show; L'Indispensable, an enormous cream; Walter Paxon, an exquisite rose-pink; Jubilee, white; Couronne d'Or, white; Mme. Geissler, pink; Eugene Verdier, cream; l'Eclatante, red; Berlioz, red; Felix Crousse, Gen. McMahon and the Duc de Wellington.

American Rose Society

The most important event of the society's year was the holding of a large exhibition solely of Roses at Philadelphia, March 20 to 24. This event entailed a very large amount of preparatory work, both by the local committees and by the executive committee of the society. The exhibition, besides being historical, was one of the most beautiful as to its arrangement, and one of the best as to quality, of any show ever held. Unfortunately it was not a financial success. The annual meeting was held at the Bellevue-Stratford Hotel, March 21, President S. S. Pennock presiding. A new scale of points for judging outdoor Roses was recommended. The dues were made $2 for all members. An invitation to hold an outdoor Rose show in Hartford, Conn., in 1918 was accepted, the dates to be June 18 to 20. The directorate was increased from six to nine members. A new Rose Test Garden had been established at Portland, Ore. Several new Roses were offered for registration during the year. An official visit was paid to the Washington Test Garden, and to the Cornell Test Garden.

During the year many new members had been added, largely owing to the publication of the most excellent Rose Annual.

S. S. Pennock retired as president after two years of very notable achievement, and Secretary Benjamin Hammond was elected to the office of president after having been secretary a number of years. The total membership was 1092. The life membership fund stood at $2300.

American Seed Trade Association

The thirty-fifth annual meeting was held at Detroit, Mich., June 19th and 21st, and was the most largely attended of any for several years.

The officers for the ensuing year were elected as follows: President, F. W. Bolgiano, Washington, D. C.; first vice-president, W. G. Scarlett, Baltimore, Md.; second vice-president, David Burpee, Philadelphia, Pa.; secretary-treasurer, C. E. Kendel, Cleveland, O.; assistant secretary-treasurer, Kirby B. White, Detroit, Mich. Executive Committee: Kirby B. White, E. L. Page, Chas. S. Burge, Leonard H. Vaughan, Howard M. Earl. Membership Committee: J. C. Robinson, B. P. Corneli, H. G. Hastings. Invitations for the next convention city were received from Cincinnati, Columbus, San Francisco, New York City and Cedar Point, Ohio.

After a very strenuous season the seedsmen were out for a good time, and the gathering was largely of a social nature, with automobile drives through the parks of Detroit, and a trip to the Oak View Farms and trial grounds of the D. M. Ferry Co.

Two papers were read, one explaining the purpose and scope of the Bureau of Markets lately established at Washington, D. C., and the other on voluntary seed control.

The various committees also made reports, and a change in the by-laws left the date of the annual meeting to be fixed for any time in the month of June rather than the Tuesday of the last full week in June.

President Kirby B. White in his address reported that 118 bills dealing with seed legislation had come before various State legislatures during the year, but most of them had been rescinded or thrown out. He also referred to the voluntary action of the seed trade as to marking up the purity and viability of the seeds sold, which had met with almost universal compliance. This amounted to a system of voluntary control in this matter. He favored the continuation of the bulletin, and suggested that prices be quoted therein, also crop reports.

The seed trade went on record as offering its fullest services to the Government in the present war.

A petition was sent to the Secretary of Agriculture asking that the same facilities that the Canadian Government offers to Americans be offered by Americans to Canadians as to seed imports.

The secretary's report stated that the membership was 196, and the total balance on hand was $1527.

A committee was appointed to keep in touch with the war council.

American Sweet Pea Society

The ninth annual show and meeting were held at Boston, July 7-8.

The following officers were elected for the ensuing year: President, Geo. W. Kerr, Doylestown, Pa.; vice-president, Edwin Jenkins, Lenox, Mass.; secretary, Wm. Gray, Bellevue ave., Newport, R. I.; treasurer, Wm. Sim, Cliftondale, Mass.

The season was a late one, and the flowers of local growers were scarcely ready; nevertheless, competition was good throughout and flowers of the highest quality yet seen at these shows were staged. The sense of the annual meeting was that next year's show should be held in New York. It was resolved to publish a bulletin in Midwinter.

The society's year for membership dues and other financial matters will end with December, instead of June as heretofore. The trials at Cornell University, Ithaca, N. Y., will be resumed.

Discussion took place on the subject of the great need of trials of standard commercial varieties, especially some stocks of Christmas Pink.

Among the best varieties at the show were the following: Hercules, Loyalty, Mrs. Cuthbertson, Faith (grey-lavender), Margaret Atlee, President, Mrs. Geo. Herbert, Blue Monarch, Dobbie's Cream, Lady Evelyn Eyre, Old Rose, Orchid, Rosabelle, Blue Picotee, Fiery Cross, R. F. Felton, Warrior, Charity (deep crimson), Mrs. Hugh Dickson Anzac (rich reddish-blue), Edna May Impd., Royal Purple, Jean Ireland, May Unwin and Mrs. C. P. Tomlin (bright crimson), King Edward, Spencer, Cherub, King Manoel, Mrs. Damerum and Constance Hinton.

Seedmen and Seedmen's Wives at D. M. Ferry Co.'s., at the Convention in June, 1917

The chief prize winners were E. W. Edwards, gdr. to A. N. Cowley, Pittsfield, Mass.; Edward Jenkins and S. W. Carlquist, Lenox, Mass., while W. G. Taylor, Newport, R. I., was winner in the amateurs classes.

The Gardeners and Florists' Club of Boston splendidly entertained the visitors.

Jas. Wheeler, Boston, was elected an honorary member in recognition of his service as show manager.

A motion that the executive committee consider the institution of a medal or cup to perpetuate the memory of the Rev. W. T. Hutchins was carried.

The bank balance was $296, which was considered satisfactory.

Canadian Horticultural Association

The annual meeting, which was well attended, was held at Toronto, early in August. The following officers were elected for the ensuing year: President, E. J. Hayward, Montreal; secretary-treasurer, H. J. Eddy, Montreal. The membership was 76. The year had been a comparatively quiet one, but some important matters have been undertaken, especially in regard to importations and the coal situation.

Chrysanthemum Society of America

The sixteenth annual meeting was held in connection with the Cleveland Flower Show, Nov. 8.

The officers elected were: President, Wm. Vert, Greenwich, Conn.; vice-president, Ernest Guter, Pittsburgh, Pa.; treasurer, John N. May, Summit, N. J.; secretary, Chas. Johnson, 2242 W. 109th st., Chicago, Ill.

Pittsburgh, Pa., was chosen as the place of meeting for 1918.

The secretary's report showed that 19 large flowered varieties had been submitted for certificate, 18 Anemone, four single and two pompon.

The society had received from the Panama-Pacific International Exposition a large gold medal that had been awarded to it. The secretary was instructed to have 20,000 applications for membership in the society printed and request members to mail them in their 1918 catalogs in an effort to obtain amateur members.

The season had been a successful one, and the show at Cleveland was of high quality.

Florists' Hail Association of America

The annual meeting was held at Newark, N. J., on Aug. 20. The number of members was 1621. Total receipts, including previous year's balance was $55,105.80, the expenditures being $45,327.18. The reserve fund now amounts to $41,463.67, of which $41,000 is invested in Municipal and Government Bonds.

An equivalent of 151,427 sq. ft. of single thick glass was broken by hail during the year, for which the association paid $7571. An equivalent of 427,804 sq. ft. of double thick glass was broken, which cost the association $29,946.

The officers were re-elected, namely: President, E. G. Hill, Richmond, Ind.; vice-president, J. F. Ammann, Edwardsville, Ill.; secretary, John G. Esler, Saddle River, N. J., and treasurer, Jos. Heacock, Wyncote, Pa.

Florists' Telegraph Delivery

The annual meeting was held at Detroit, Oct. 2 and 3, and was the most successful in the history of the organization.

The officers elected were: President, Wm. F. Gude, Washington, D. C.; vice-president, Philip Breitmeyer, Detroit, Mich.; treasurer, W. L. Rock, Kansas City, Mo.; secretary, Albert Pochelon, 153 Bates st., Detroit, Mich.

The questions discussed concerned the necessity of educating the florists of the country along lines of greater efficiency, better service to patrons, stricter observance of business ethics, greater promptness in collections and payments of bills, the importance of publicity as to the educational aims of the F. T. D., and educating the public generally as to the greater use of floral gifts. The selection of a trade-mark or emblem was discussed, and an open competition for same was inaugurated, and it was agreed to make travelling men associate members. A paper on the important question of overhead cost and charges as affecting profits, was read by H. P. Knoble of Cleveland. A discussion took place as to the relationship of the society to the S. A. F. and O. H. It was agreed that the F. T. D. shall guarantee the first year's dues of new members, to the S. A. F.

Subscriptions to the national fund for the publicity of flowers were taken to the total of $6500. An oil painting of an ocean greyhound bearing F. T. D. floral messages, was auctioned off, and sold to Philip Breitmeyer for $150. The painting was donated by Poehlmann Bros. Co.

National Association of Gardeners

The sixth annual convention was held at Washington, D. C., Dec. 4 and 5, 1916. President W. N. Craig of Brookline, Mass., presided. The weather was fine and everything moved smoothly.

Wm. F. Gude, Washington representative of the S. A. F., did everything possible to make the stay of the members enjoyable and instructive. There was a fairly good attendance.

Chicago was chosen as the next place of convention.

The new officers elected were: President, T. W. Head, Lake Forest, Ill.; vice-president, Theo. Wirth, Indianapolis, Ind.; secretary, M. C. Ebel, Madison, N. J.; treasurer, Jas. Stuart, Mamaroneck, N. Y.

The following were elected trustees: Wm. Turner, Peter Duff, Wm. Duckham, Wm. Kleinheinz and John Huss.

Secretary Ebel announced that the total membership was 1200, 300 new members having joined during the past year. He advised having suitable representation of the association at the national capital in case any legislation came up which required attention. Geo. W. Hess, superintendent of the Botanical Gardens, was unanimously elected.

It was voted to print a list of the members. Wm. F. Gude was elected an honorary member.

The surplus funds in the treasury amounted to $2000.

Reports were heard from the national co-operative committee and from the committee for the preservation and propagation of birds.

Visits were made to various places in the neighborhood of Washington, including Arlington Cemetery and the farm of the Department of Agriculture, also the Gude Bros. Co.'s establishment at Andalusia.

During the year the constitution and by-laws were revised.

An English Yew tree was planted by the association, near the tomb of George Washington.

A meeting of the members of the society to discuss a scheme of greater co-operation was held in New York in November. Several executive meetings were also held, and a successful year's work was reported.

Society of American Florists

The thirty-third annual meeting and convention of this society was held in New York, Aug. 21 to 23. President R. C. Kerr of Houston, Texas, presided, and there was a good attendance. The exhibition at the Grand Central Palace was also one of the best of recent years. The convention was described as a "Business Convention," inasmuch as the subjects discussed pertained to Collections, Advertising, Windstorm Insurance and such like.

The great achievement of the convention was the inauguration of a fund for the national advertising of cut flowers through the magazines and newspapers. The sum of $8,000 was subscribed among members on the floor, while the S. A. F. itself promised an additional $5000, and subscriptions were later received totaling $15,000. The proposition made by the publicity committee of the society was that $50,000 be spent during the coming year and that a sum equaling this amount be spent during the succeeding three years.

The officers elected were: President, Chas. H. Totty, Madison, N. J.; vice-president, Jules L. Bourdet, St. Louis, Mo.; treasurer, J. J. Hess, Omaha, Neb.; secretary, John Young, 53 W. 28th st., New York.

The next convention will be held in conjunction with the National Flower Show at St. Louis, April 6 to 15, 1918; while the convention of 1919 will be held at Detroit, Mich. A proposition to have the election of the secretary left in the hands of the board of directors was lost on vote. W. F. Gude, Washington representative, submitted a long report on legislative matters during the year. He spoke of the Valley situation, of the long struggle that had taken place in regard to importations of Azaleas, also in regard to express shipments of cut flowers, wherein the express company had deemed a 24 hours' delay in the shipment of cut flowers as not unreasonable. Another matter that had received the attention of the legislation committee was that of granting licenses to firemen. The war revenue bill of the early Summer had suggested the impost of a 10 per cent. ad valorem duty on all imports. This would have caused great inconvenience to importers. The proposition was withdrawn. The coal situation, which materially affected producers everywhere, was another matter that had received considerable attention.

Patrick Welch of Boston, delivered an important report of the work which had been undertaken by the committee on collections. Anders Rasmussen, New Albany, Ind., delivered a report on hail and windstorm insurance. Both of these reports were adopted.

A convention garden was made at the Bronx Park.

The grand total of membership was 2215. The society's net balance of funds was $43,025.78.

Vegetable Growers' Association of America

The tenth anniversary of this organization was celebrated in the week of Oct. 20 at Springfield, Mass. There was a good attendance. In connection, there was a large vegetable exhibition called the First National Vegetable Show. There were represented in this exhibition the following: Flintstone Fruit Orchards, Dalton, Mass.; the Highland

A Field of Cobbage "Seed Mothers"
It was from here that Prof. Jones of the Wisconsin State Exper. Station, Madison, Wis., selected his strain of disease-resistance cabbage

Co-operative Fruit Exchange, Marlboro, Mass.; the Oregon Agricultural College; the Bridgeport Vegetable Growers' Ass'n; the Norwich Vegetable Growers' Ass'n; the Boston Market Growers' Ass'n; the Mass. Vegetable Growers' Ass'n; the New York Vegetable Growers' Ass'n; the Newcastle (Pa.) Vegetable Growers' Ass'n; the Westlook Farm in Pennsylvania (R. P. Lovett, owner); the Growers' Ass'n of St. Paul, Minn.; the Munroe Market Gardeners' Ass'n of Munroe County, N. Y.; the John H. Fowler Co. of Westfield, Mass.; and others too numerous to name.

Detroit, Mich., was chosen as the next place for the convention, and the following officers were elected: President, Howard W. Selby, Providence, R. I.; secretary, Samuel W. Severance, Inter-Southern Bldg., Louisville, Ky.; treasurer, Eugene Davis, Grand Rapids, Mich.

During the convention the program covering the selling, cultivating, marketing and general care of vegetables was discussed. Drying and dehydrating of certain vegetables was very thoroughly gone into.

The annual banquet was held at the Hotel Kimball in Springfield where about four hundred members sat down to a unique menu consisting entirely of vegetables. An automobile tour in which about three hundred and forty members took part was enjoyed throughout parts of western Massachusetts, various visits being made, among them to the Massachusetts Agricultural College Ground.

HOW TO TREAT THE AMERICAN FLAG

ALL good Americans believe that they love and reverence the Stars and Stripes, but not all of them know how to give it the proper treatment of respect under varying conditions. To supply knowledge of the etiquette of the flag, there is here reprinted from *The Literary Digest* a compilation first made for the New York *Sun*, of facts and rules relating to the proper use of and respect for the Stars and Stripes.

Anniversaries on which the flag should be displayed at full staff:

January 3, Battle of Princeton.
February 12, Lincoln's birthday.
February 22, Washington's birthday.
April 19, Battle of Lexington.
May 30, Memorial Day.
June 14, Flag Day.
June 17, Battle of Bunker Hill.
July 4, Independence Day.
September 6, Lafayette's birthday.
October 12, Columbus Day.
October 19, surrender at Yorktown.
November 25, Evacuation Day.
December 26, Battle of Trenton.

and other legal holidays or special occasions.

Section III

Some Legal Notes and Verdicts of the Year

In the annual agricultural appropriation bill the sum of $243,000 was voted for seeds for free distribution.

* * *

The report of analyses of samples of commercial fertilizer collected by the Commissioner of Agriculture of New York during 1916 was published in Bulletin 425 of the New York Agri. Exp. Sta. at Geneva. These analyses stated the number of pounds of nitrogen phosphoric acid and potash per 100 guaranteed by the manufacturer and as found by the investigator.

* * *

Great Britain fixed prices on food products for 1917 in the early part of the year as follows: Wheat, 60 shillings per quarter of 504 lbs.; Oats, 38s. 6d. per quarter of 336 lbs.; Potatoes, in not less than six-ton lots f. o. b., 115 shillings per ton, from Sept. 15 to Jan. 31; 120 shillings for delivery in February and March, and 130 shillings other times.

* * *

The Farmers' Non-partisan League of North Dakota obtained a majority in the legislature of that State, members also filling most of the important offices.

* * *

The Federal Hort. Board endeavored to obtain from the Senate legislation that would give it unlimited power with respect to the quarantining of sections of the country. The endeavor was successfully contested.

* * *

At New York, in January, the Board of U. S. General Appraisers rendered a decision that Tulip bulbs are dutiable at 50c. per 1000.

* * *

A pure seed bill (No. 98) was introduced into the Kansas Legislature, making it a misdemeanor for any dealer to sell mixed seeds not plainly branded as such. A viability of 40 per cent. was also fixed as the standard for grass seed; 60 per cent. for Alfalfa, Clover, etc., and 75 per cent. for all other seeds.

* * *

The Barklay misbranding bill, which was before the House of Representatives at the end of the 65th session of Congress, did not pass. It would have made the seed trade subject to prosecution when, unknowingly, any member misnamed seeds or stock.

Senator H. C. White of Iowa presented a bill before the State Legislature providing for the prosecution of seed companies that sold seed not up to the guarantee of germination. He had purchased seed Corn which was guaranteed at 75 per cent. germination but which, when tested, germinated only 67 per cent.

* * *

An advance was made by the Post Office Department in the cost of envelopes of 43c. per 1000. Stamped window envelopes also became available.

* * *

Gladiolus mother flowering bulbs were allowed entry free of duty in an important decision given under protest No. 788546. Grape Hyacinth bulbs under another protest were passed for assessment at 50c. per 1000 as against $2.50 per 1000 for Hyacinth bulbs, under which they had previously been classified.

* * *

The firemen's union of Ohio endeavored to have the licensed fireman act enforced against all owners of boilers of 30 h. p. or over. The florists, assisted by the S. A. F., contested this.

* * *

A bill was introduced into the New York Legislature permitting the sale of flowers on Easter and the Sundays nearest Christmas, New Years and Memorial Day and on any other Sunday between 9 a.m. and 5 p.m., from flower shops in the vicinity of cemeteries.

* * *

While an embargo was placed on certain commodities carried by railroads, all seed shipments were exempted.

* * *

Health insurance bills were introduced into the legislatures of New York, New Jersey and Massachusetts, calling for the payment of two-thirds of the amount of wages during a period of 26 weeks during illness, to persons whose monthly wages did not exceed $100. The bill was opposed by both capital and labor.

* * *

The New Orleans, Mobile & Chicago R. R. Co. sought for a review of a decision against it of $313, awarded for damages to a shipment of Sweet Potatoes. The court found the carriers negligent and refused the petition.

* * *

A bill was introduced into the New York Legislature to create a minimum wage commission of five members, appointed by the Governor, to decide on a minimum wage for minors under 18 years and for women engaged in industrial occupations.

* * *

A case of general interest was decided in an English court. A farmer sued another to recover damages and the cost of 100 lbs. of Onion seed, warranted fertile but which although planted on fertile ground, proved a complete failure. The judge, holding that there had been a warranty given, decided for the plaintiff.

* * *

An English court decided an interesting case of overhanging trees. The plaintiff sued for loss of produce in his garden and other damages. He had asked to have the offending limb lopped off, but

unavailingly. The old presumption is that the person over whose property the tree overhangs may lop off the limb, and although the plaintiff did not take advantage of this, the judge decided in his favor.

* * *

The Kentucky pure seed law, as applied to seeds sold in sealed packets, caused much confusion and uncertainty among Kentucky retailers, the latter being uncertain as to what was required in regard to germination guarantee, etc.

* * *

Muscari bulbs were held dutiable at 50c. per 1000 by the U. S. Treasury Dept., under Tariff Act of 1913, par. 210, as claimed by H. Langeler, New York City, import decision No. 40705, protest 803015.

* * *

The Secretary of Agriculture announced a quarantine against the importation of Currant and Gooseberry plants from Europe and Asia, and against the movement of five-leaved Pine nursery stock and Currant and Gooseberry plants from Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, New Jersey, Wisconsin and Minnesota, on account of the White Pine blister rust. These orders became effective June 1.

* * *

It was stated by Herbert Quick, of the Federal Farm Loan Board, that under the new farm loan act loans would be made by farmers to farmers.

* * *

Decisions of the Supreme Court of the United States, sustained the validity of the workmen's compensation laws in the States of New York, Washington and Iowa, each of which represents one of the three general types of such laws.

* * *

A pure seed bill, which was a slight modification of that drafted by the State Commission and read before the California Nurserymen's Association, at Santa Barbara, Oct. 26, 1916, was introduced into the California Legislature.

* * *

Several bills calling for one-cent first class postage, within the limits of a postoffice delivery district, were introduced into Congress.

* * *

A bill to protect owners of labels, trade marks, etc., against the use of same without the owners' written consent was introduced into the House of Representatives.

* * *

To provide for the thousands of Germans, including many florists and gardeners, who had been in this country for many years, but who had never become naturalized citizens, a bill was introduced into the Senate granting citizenship, on application, to Germans over 21 years old who had resided in this country more than five years.

* * *

A bill calling for an appropriation of $25,000 for establishing an agricultural experiment station at Lancaster, Pa., a second bill providing for a station at Dorris, Cal., and a third for the establishment of one at Mauston, Wis., were introduced into Congress.

A bill providing for the inspection of mail shipment of horticultural and agricultural stock, at point of delivery at U. S. post offices, was introduced into Congress.

* * *

President Wilson, in his proclamation, said that German insurance companies operating in the United States would be permitted to continue business as before the declaration of war with Germany. This was done to protect the many American business firms who held insurance in German companies. However, regulations in force prevented any use of these funds for enemy use, without the permission of the Government.

* * *

The United States Supreme Court upheld as constitutional the law of the State of Oregon fixing minimum wages for women. The Oregon State law limiting the hours of labor of men in mills, factories and other manufacturing establishments was also held constitutional.

* * *

Commerce Reports stated that interest in the prevention and control of plant diseases was increasing in France, and that each year more French horticultural establishments were submitting to Government inspection.

* * *

Three bills providing respectively for regulating the movement of seeds in interstate commerce, the appropriation of $5,000,000 for the immediate distribution of valuable seeds to farmers, and the appropriation of $250,000 for the distribution before June 1 of seeds and shrubs, were introduced into Congress. The bill to prevent the sale or distribution of adulterated or misbranded seeds was reintroduced into the House.

* * *

A bill providing for an appropriation of $50,000 for a series of thorough and elaborate studies and experiments to perfect a system of frost prevention in the fruit growing sections of the Rocky Mountains was introduced into the House of Representatives.

* * *

The Department of Commerce at Washington, D. C., received numerous inquiries from florists, nurserymen and seedsmen doing an import business as to whom they might trade with. The whole matter of trade relations was under consideration by an advisory committee representing the departments of State, Commerce and Justice.

* * *

A bill was introduced into Congress providing for a census every five years of the products of various industries. This would make available valuable statistics in the florists' trade.

* * *

The Massachusetts "blue laws" which forbade a man working in his garden on Sunday were repealed.

* * *

On April 18 the New Jersey State Department of Agriculture declared a quarantine against the White Pine blister rust.

Postmaster Patten of New York City cautioned the public against using pasters showing the American Flag on mail matter in such a way that they would be defaced in cancelling stamps or opening mail.

* * *

The Secretary of Agriculture ordered a White Pine blister rust quarantine, to become effective May 1. The order prohibited the movement of White Pines and Black Currant plants from the New England States to points outside of New England.

* * *

At a conference including among its members 62 officials representing State agricultural colleges and commissions from 32 States, which met at the request of the Secretary of Agriculture to confer with representatives of that department, various recommendations, including an appropriation of $25,000,000 for the use of the department, survey of food supplies, regulation of food prices and the mobilization for food production were made.

* * *

A bill was introduced into Congress prohibiting the making of false statements in advertisements.

* * *

Gov. J. J. Cornwell of West Virginia proclaimed May 13 as Mother's Day, in accordance with the annual custom in that State. The originator of this holiday, Anna Jarvis, is a native of West Virginia.

* * *

Alois Frey, of Crown Point, Ind., filed suit against Gebhard Prechti, florist of Montebello, to prevent him from harvesting or selling "Frey's Rainbow Freesias," of which Mr. Frey claimed to be the originator. He stated that the defendant had conspired to obtain the bulbs and was growing them.

* * *

The Gore-Lever food production bill introduced into Congress among other provisions provided for a nation-wide survey of prices, food corners, acreage and possible production and authorizes the Secretary of Agriculture to purchase seeds for farmers and distribute them; also $2,500,000 for storing seeds. A clause permitting comandeering of seeds by the Government was stricken out.

* * *

In the War Revenue measure passed by the House of Representatives letters for local delivery were exempt from the one-cent increase on first class matter, letters otherwise were to be three cents and post cards two cents. This measure also proposed to add 10 per cent. to the prevailing duty on imported stock. Florists and nurserymen protested at the interpretation which based this added duty on an ad valorem basis, claiming it would involve needless expense and litigation.

* * *

It was announced that the glass factories were expected to shut down May 25, to open probably some time in October, and that the only supply available during the Summer would be that in the hands of the jobbers.

* * *

A bill authorizing an exhaustive food census was passed by Congress, Monday, May 28, carrying provisions of $14,770,000. Included

among its authorizations were: The Secretary of Agriculture was given power to compel sale to him of seeds for distribution to farmers; the appointment of two additional Secretaries of Agriculture, at $5000 a year each; an allowance of $5,778,000 for the purchase of seeds for farmers; an allowance of $441,000 for the eradication of plant pests and diseases.

* * *

The Senate on June 2 passed the Gore bill, with its $11,000,000 appropriation, to stimulate and regulate the production of food. Under this bill the Secretary of Agriculture is authorized to purchase seeds and sell them to farmers at cost, an appropriation of $2,500,000 being provided.

* * *

California legislation included laws as follows: Senate Bill No. 458, empowering State Board of Horticultural Examiners to appoint County Horticultural Commissioners upon refusal of County Boards of Supervisors to appoint them; also dealing with the control of squirrels, gophers and other pests, and inspection of nursery stock and disposal of that infected; No. 460 provides two Field Deputies of the State Horticultural Commissioner to bring about uniformity in enforcement of horticultural laws; No. 682 provides for search in foreign countries for parasites of the mealy bug; No. 751 protects the State against amateur entomologists who might bring in dangerous insects.

* * *

At a conference called by the Secretary of Agriculture, at which representatives of 21 leading seed firms were present and officers of the American Seed Trade Ass'n and the Wholesale Grass Seed Dealers' Association, it was agreed by those present to arrange for the voluntary furnishing of information as follows, concerning seeds sold to farmers: (1) name of seedsman; (2) kind of seed; (3) proportion of live seed present, with month and year of germination test; (4) country or locality of origin in the case of imported Beans, Soy Beans, Turkestan Alfalfa and Red Clover from Southern Europe and Chile.

* * *

The House Committee made a favorable report on the trading-with-the-enemy act, introduced into the Senate by Senator Fletcher of Florida. The bill prohibited the transaction of business between citizens of the United States and citizens or residents of countries with which the United States is at war; or the residents of neutral or Allied territory under the control of the enemy.

* * *

The embargo on raffia from Madagascar was lifted.

* * *

It was reported that the Senate finance committee had excised the 10 per cent. tariff tax from the House bill for revenue, but it was suggested that a 10 per cent. specific tax would take the place of the ad valorem tax.

* * *

The wholesale florists of New York City, after debating the matter for several years, finally came to an agreement to close their stores entirely on Sundays.

In import decision No. 40844, protest 805198 of the Urbana Floral Co. (Cleveland), covering Gladioli bulbs, the Board of General Appraisers' decision allowed these to come in free as flowering bulbs imported for propagating purposes, instead of bulbs cultivated for their flowers, as at first classified, on which latter a duty of 50c. per 1000 is charged.

* * *

Treas. Decision 37217,-G. A. 8070, covered the protest of the International Forwarding Co. on Taxus cuspidata and T. baccata. These were first classified as dutiable, under nursery stock, but later the Board of General Appraisers permitted them to come in free as coniferæ.

* * *

At the annual meeting of the Wholesale Grass Seed Association, June 18 and 19, a resolution was unanimously adopted to the effect that the association does not approve of asking for exemption of seedsmen as a class from military service.

* * *

A case of interest to seedsmen is recounted in the Nottingham (England) *Guardian*. A firm of seedsmen at Boston, England, were summoned for offering for sale seed Potatoes at prices higher than those scheduled as the maximum by the Food Controller. Although they said that the order had not been properly disseminated and had been violated inadvertently, the magistrates held the defendant guilty and imposed a fine.

* * *

Deputy Attorney General J. F. Baker, of Wisconsin, gave the opinion that, under the Wisconsin seed law, seedsmen could not avoid responsibility for selling impure seed by attaching to their contract of sale a statement to the effect that they gave no guaranty as to the reliability of the description, quality or productiveness of their stock, and that if the customer did not accept the goods under that condition they were to be at once returned.

* * *

The Potato quarantine regulations were amended to permit, free of restrictions, the importation of Potatoes into Hawaii for local use only, from any foreign country and from the Dominion of Canada and Bermuda into the United States or any of its Territories or Districts. The order became effective July 1.

* * *

Under a protest made by P. C. Kuyper & Co. Muscari bulbs were held dutiable at 50c. per 1000.

* * *

Under protest of Maltus & Ware orchids were allowed free entry as mother-flowering bulbs.

* * *

The Postmaster General issued an order increasing the limit of C. O. D. indemnity on insured parcels to $100, to become effective July 1, a fee of 10c. to be paid for parcels on which the amount to be remitted does not exceed $50 and a fee of 25c. on those on which the amount to be collected is more than $50 and does not exceed $100. These fees include the insurance, to the amounts indicated.

Under date of Aug. 29, a cablegram was received from the Hague, the Netherlands, advising that the Dutch Government had forbidden the exportation of flower bulbs. This order was later rescinded by the Dutch Government, and on Sept. 24 the S. S. Waaldyk arrived at New York with 23,000 cases of bulbs. This was followed several weeks later by the S. S. Scheedyk, with 21,000 cases of bulbs.

* * *

The French Government, under date of Aug. 24, issued a decree forbidding the exportation or re-exportation of trees, shrubs, or other nursery stock, except to the United States and the Allied countries.

* * *

On Aug. 21 President Wilson issued a proclamation fixing prices of bituminous and anthracite coal. These prices became effective on Aug. 21 for bituminous and Sept. 1 for anthracite, and the order included export and bunker coal. The prices were provisional, subject to revision in cases where mines could prove that they could not produce coal at these prices except at a loss. The matter of regulations concerning the production and distribution of coal were put in charge of H. A. Garfield, who was appointed U. S. Fuel Administrator.

* * *

In order to relieve congestion, caused by the unprecedented use of the railroads by the Government for the movement of troops and supplies and the heavy shipments of merchandise made by shippers who usually sent by freight, the express companies declared various embargoes. These lasted for a day or more at a time and were principally put in force in the larger cities. * * *

The Pennsylvania State authorities in September placed an embargo on shipments of certain evergreen trees from New England, commonly used for Christmas decorations, forbidding their importation into Pennsylvania in order to prevent the introduction of the gypsy moth into that State.

* * *

Because the U. S. Government had commandeered a portion of its fleet, the Great Lakes Transit Corporation suspended service on the lakes between Buffalo, Erie, Detroit and other Lake Michigan ports.

* * *

The Secretary of the Treasury announced, on Oct. 6, that the Bureau of War Risk Insurance had reduced its rates on all American steamers and cargoes traversing the war zone, from 6½ per cent. to 5 per cent., because of the decrease in the risks.

* * *

On Oct. 9 a delegation of New York and Philadelphia florists met the vice-presidents of the American, the Adams, the Wells-Fargo and Southern Express Companies to discuss the express situation, especially in relation to Christmas shipments. The express companies representatives explained the difficulties under which they were working and it seemed to be the general opinion of the florist attending the meeting that it would be best to leave the matter in the hands of the companies, to do the best they could under the circumstances.

* * *

The S. A. F. Committee on Tariff and Legislation reported that upon protest of the Orchid Growers' Ass'n, that fumigation damaged

and sometimes killed the plants, the Federal Horticultural Board's regulations concerning the fumigation of orchids were modified.

The S. A. F. Committee on Tariff and Legislation was also successful in inducing the French Government to raise the embargo on the importation of raffia from Madagascar. The committee was, however, unable to raise the embargo on Lily of the Valley pips from Copenhagen, Denmark, the British authorities maintaining that these were German grown.

* * *

The Federal Standard Container Act, under which the Secretary of Agriculture has the authority to make regulations concerning containers for produce, etc., went into effect Nov. 1.

* * *

The Dutch nurserymen and other Hollanders stranded in New York City, petitioned President Wilson, about Nov. 1, to arrange for their passage to Holland on a Dutch steamer at that time lying in port in New York Harbor.

* * *

The British Government, about Nov. 1 ratified the 3c. postal rate, to conform with the U. S. War Revenue Bill which went into effect Nov. 2.

* * *

The War Revenue bill, after passing the House of Representatives and the Senate was placed in the hands of the President on Oct. 3. The clause of the bill which, as it read previously, appeared to require a 1c. war tax on catalogs, was clarified, and as it plainly applied to parcel post packages on which the postage was 25c. or more, the clause evidently did not apply to catalogs. The law, however, placed a heavy tax on second class matter, the tax increasing annually till the fifth year after the law's going into effect, being a fixed amount on reading matter and a charge based on the zone system for the advertising carried. First class mail rates were also increased.

* * *

A. N. Pierson, Inc., Cromwell, Conn., insured its employees; $500 on death after one year's service; $100 per year extra for those with the firm a longer time, up to $1500; in case of permanent disability the principal amount is to be paid, either in a lump sum or in installments. The insurance was written on the group plan, by the Travelers' Insurance Co. of Hartford.

* * *

Senator John W. Weeks, of Massachusetts, introduced an amendment to allow a refund of excess duty paid by importers because of clerical error in invoicing or entering merchandise.

* * *

Congressman Adamson of Georgia purposed to introduce a bill designed to prevent swindling in interstate commerce, carried on through misbranding, false circulars and advertisements, etc.

* * *

The Post Office announced that all mail service to Germany, Austria, Hungary, Luxemburg, Bulgaria, Serbia, Montenegro and Turkey; also parcel-post to Belgium, Netherlands, Norway, Sweden and Denmark had been suspended; also that information concerning mail for and via Europe, the West Indies, Mexico and Central and South America could not be given, except that it would be forwarded at the first opportunity.

Senator Henry F. Hollis of New Hampshire, planned to introduce an amendment to the general revenue bill to make allowances for business losses actually sustained, in computing net income liable to taxation.

* * *

The President placed an embargo on a large number of articles of merchandise, forbidding their export except under license from the Government, partly to prevent their being sent to enemy countries and partly that this country might not suffer shortages in certain essential articles. The list of such articles was changed from time to time as circumstances necessitated.

* * *

Early in August the Post Office announced that parcel post service between this country and Greece had been suspended.

* * *

Due to war conditions, express regulations in New York, Chicago and Washington were put into effect by which the express companies would not call for packages any later than 5 p.m., or they might be left at the express offices not later than 6 p.m.

* * *

About the middle of August the new nursery law of Pennsylvania went into effect. It requires all persons selling trees to take out a State license.

School gardening is a feature of the curriculum of public schools, both in the country and the cities. There are several organizations, with more or less of a national scope, devoted to the teaching of gardening to children.

School Gardening at Porto Rico, W. I.
by Boys of the San Augustin School, Puerta de Tierra under Rev. Chas. Sylvan Hoff

Section IV

Necrology

Abbey, Geo., d. July 1, at St. Albans, England, a. 81. He was one of the best known of the older British horticulturists, being well up on the scientific as well as the practical side. He was a voluminous writer and contributed much of value to horticultural literature.

Adler, Gustav, foreman for Geo. Wrege, florist of Jersey City, N. J., d. May 28, a. 40.

Allan, John, Providence, R. I., noted as one of the oldest gardeners in that section, d. Feb. 15, a. 85. He was superintendent at Cornelius Vanderbilt's Oakland Farm for many years. He was born in Scotland.

Amann, Joseph, for many years in the florist business with his father, at Middle Village, L. I., N. Y., d. May 2.

Anderson, Jas., connected with the Chicago Wholesale Cut Flower market, d. Dec. 31, 1916, in Chicago, a. 36.

Arnold, Geo. H., Braintree, Mass., one of the best known market gardeners in Massachusetts, d. Jan. 12, a. 81.

Arnold, W. E., d. May 18, at Jacksonville, Fla. He was a compiler of telegraph codes. His No. 16 was published by The A. T. De La Mare Co., Inc., in 1899.

Ayres, Mrs. M. M., St. Louis, Mo., d. Dec. 30, 1916. She was one of St. Louis's pioneer florists.

Bahr, John W., florist, Elizabeth, N. J., d. Jan. 3, of heart disease. He was a native of Germany and had been in business more than 30 years.

Baldinger, John, d. Dec. 1, 1916, at Avalon, Pa. He was one of the first florists in Pittsburg; at one time employed by B. L. Elliott Co.

Baldwin, Leslie D., manager of Baldwin Greenhouses, Fitchburg, Mass., d. Dec. 13, 1916, a. 35.

Barry, Wm., one of the most prominent horticulturists and nurserymen of England, d. in Rochester, Dec. 12, 1916. He was president of the Western New York Horticultural Society for 27 years.

Bartels, F. C., manager of the Gasser Co.'s greenhouses at Cleveland, Ohio, was shot and killed by a burglar on Sept. 15. He was an active member of the Cleveland Florists' Club. He was 61 years old at the time of his death.

Batchelor, Samuel, formerly superintendent gardener at an estate at Mamaroneck, N. Y., and later at Oyster Bay, L. I., N. Y., d. the end of January, of hemorrhage. He was a member of the New York Florists' Club. He was born in England.

Bauer, Henry, superintendent of the grounds at Pine Bluff Sanitarium, at Salisbury, Md., d. July 27. His father, Henry Bauer, was for many years in the florists' business in Salisbury.

Baur, A. J., of the A. J. Baur Floral Co., Erie, d. Aug. 14, a. about 48.

Beavan, Edward A., probably the largest shipper of wild Smilax and other evergreens, d. at Evergreen, Ala., Oct. 22.

Bell, C. S., d. Jan. 27, at Oklahoma City, Okla. He was a pioneer florist of that city.

Benthey, Mrs. Lula, d. May 9, a. 62, at Chicago, Ill. She was the wife of F. F. Benthey, of Kennicott Bros. Co., Chicago.

Bezdek, Mrs. V., wife of V. Bezdek, the latter a successful grower of Carnations for the Chicago wholesale market, d. Sept. 7.

Bogart, Peter L., florist, New York City, d. April 9, of spinal disease, a. 60. His business had been established or 31 years.

Bogue, Nelson, proprietor of the well-known Bogue Nurseries at Daws, N. Y., d. May 28, from pneumonia, a. 83. He had been active during his life in horticultural and agricultural circles, having served as an officer in many societies.

Bohler, John Jacob, Latrobe, Pa., florist and caretaker of Idlewild Park for a number of years, d. April 11, of dropsy, a. 67. He was born in Germany.

Boks, Martin, nurseryman, New York City, d. March 28, at his home in East Rutherford, N. J., a. 48.

Bopp, John A., florist, Cumberland, Md., d. early in August, a. 62.

Brinton, Wm. P., florist, Christiana, Pa., d. early in May, a. 82. He was an active member of the Pennsylvania Hort. Society.

Brown, Asa L., Kearny, N. J., florist, d. Dec. 21, 1916, a. 68. He was a resident of Kearny for over 50 years.

Browne, Joe, owner of the Lischey Nurseries, Nashville, Tenn., d. Jan. 25, a. 57. He was a Negro and well liked in his home city.

Buck, Herbert B., employed with W. E. Marshall & Co., seedsmen, New York City, d. July 21, a. 29, of typoid pneumonia. He came rom England.

Burdett, Harold, florist, Seattle, Wash., d. Nov. 22, 1916, a. 32. He was an Englishman by birth and came to Seattle when he was 10 years old. On the outbreak of the European war he joined a Canadian regiment and went with it to France. He was killed in battle, in No Man's Land.

Calthrop, Rev. Dr. Samuel, Syracuse, N. Y., d. the middle of May. He was noted as a student of sun spots.

Clucas, R. W., proprietor of the Palisades Nurseries, Sparkill, N. Y. d. Oct. 6, a. 57. He was born in Liverpool, England. In 1878 he came to the United States.

Conbeeney, Patrick F., for 35 years foreman for Thomas Galvin, the landscape gardener and florist, d. March 25, at Newport, R. I.

Cotter, Lawrence, pioneer florist and gardener, d. March 24, at Jamestown, N. Y., a. 62. He was born in Ireland, where he began his career as a gardener.

Crawshaw, Geo., florist, Newburgh, N. Y., d. April 3.

Cull, Alfred, salesman at Covent Garden Flower Market, London, England, d. about Aug. 1, a. 37, of pneumonia. He was the son of W. A. Cull, J. P., nurseryman.

Cummings, Geo. H., secretary Sioux City Nursery Co., Sioux City, Ia., d. Oct. 13, a. about 67.

Cushman, Montgomery, member of the firm of M. Cushman & Co., seedsman, Rochester, N. Y., d. Sept. 12, a. 43.

Cushing, J. H., proprietor of the Quidnick Greenhouses, Quidnick, R. I., d. Nov. 25, 1916, a. 66. He had over 100,000ft. of glass, and as a grower and a wholesaler of cut flowers was known throughout Rhode Island.

Daenhke, Herman, florist, Morrell Park, Md., d. Nov. 5.

Davey, John, employed with the growing establishment of John Scott estate, Brooklyn, N. Y., d. April 30, a. 60, of cancer.

Downer, Frank N., prominent nurseryman of Bowling Green, Ky., d. Feb. 22, from heart disease, a. 65.

Duffy, James, florist of Greensboro, N. C., d. April 19, a 73.

Duncan, David W., florist and grower, with greenhouses at Arlington, Mass., d. Feb. 23, a. 50 years. He was born in Scotland and on coming to this country worked for R. & J. Farquhar & Co., Boston.

Eisennart, Rodman M., Torresdale, Philadelphia, d. June 12, of heart failure, a. 62. He was a large grower of Sweet Peas and Violets.

Elbrecht, Chas., florist, Westerly, R. I., d. there Dec. 10 1916, a. 60, of gas poisoning.

Elicker, Jacob, Homestead, Pa., one of the oldest florists in Allegheny County, d. early in April, of erysipelas.

Elser, John M., d. Jan. 8, a. 60. for 40 years was engaged in forestry. He was a native of Germany.

Elspermann, John C., florist, Evansville, Ind., d. Aug. 6, a. 60.

Engelbirt, John H., for 25 years representative of the Whilldin Pottery Co., d. March 3, by asphyxiation, due to a broken gas main. His wife, Georgiana Warren, died at the same time.

Entemann, Wm. B., wholesale and retail florist, d. Sept. 23, a. 50. He was a member of the S. A. F. and the New York Florists' Club.

Erdmann, Walter W., florist and grower of Baltimore, Md., d. Sept. 21, of spinal meningitis. He was a member of the firm of Burnett & Erdmann.

Falkenholm, John, a. 62, well-known gardener on the G. M. Hutton estate, Newport, R. I., d. April 20. He was born in Sweden.

Fisher, Dr. Jabez, horticulturist and fruit grower, d. Dec. 15, 1916, at Fitchburg Mass. a. 93.

Fink, John W., well-known Chicago florist, d. the end of April, while on a visit to New York City; death was due to heart failure,

Flitton, Noah F., superintendent of Gwynns Falls Park, Baltimore, Md., d. Oct. 9, of Bright's disease. He was born in England and came to America about 40 years ago. For 11 years he was secretary of the Baltimore Gardeners and Florists' Club.

Fischer, Chas., florist, Winfield, N. Y., d. the middle of May, of heart disease, a. 50.

Floth, Mrs. M. wife of Paul Floth, florist, Omaha, Neb., d. April 17. She was a pioneer florist of Omaha, having gone there 30 years ago.

Follwell, Fred'k S., florist, Pittsfield, Mass., d. Oct. 22, a. 67. He was born in Canterbury, England.

Friedman, Mrs. Rae L., wholesale and retail florist, New York City, d. in March, a. 34.

Fullman, Fred'k, landscape gardener, d. in January, at his home in Bloomfield, N. J., a. 87.

Glaser, A. L., well-known florist of Dubuque, Ia., d. April 12. He came from Germany when 19 years old.

Getzinger, John H., Toledo, O., for 18 years chief decorator and designer for the Scottwood Greenhouses, d. in January, a. 39.

Goodman, L. A., horticulturist, Kansas City, Mo., d. June 27, a. about 70. He was for many years president of the Missouri Valley Hort. Society and the American Pomological Society.

Goranson, John, of Larson & Goranson, well-known florists of Joliet, d. in that city, Feb. 15, a. 43.

Gowan, H. L., florist of Lynn, Mass., d. March 10, a. over 70.

Grafstrom, Tortus, well-known gardener of Hartford, Conn., d. May 2, of pneumonia. A brother is in the florists' business in New York City.

Grinnell, E. B., widely known as an evergreen dealer, at Providence, R. I., d. early in April, a. almost 70.

Hale, John Howland, nurseryman and horticulturist, d. Oct. 12, at Glastonbury, Conn., a. 64. He was at one time president of the American Ass'n of Nurserymen and the American Pomological Society. In 1890 he had entire charge of the first special investigation into the nursery industry made by the U. S. Census. He was also noted for his knowledge and skill in Peach growing.

Hart, Benno Ludwig, florist, Cleveland, O., d. June 30, of diphtheria. He was still a young man, member of the firm of Hart Bros.

Harvey, Wm., gardener and florist, Needham, Mass., d. Sept. 25, a. 72. He was born in Scotland.

Hassett, James, nurseryman, Davenport, Ia., d. May 3, a. 55, after an operation. He was proprietor of the Davenport Nursery.

Haven, Edwin D., of the Haven Seed Co., Santa Ana, Cal., d. Sept. 15, a. 62, of pernicious anæmia. His specialty was raising Tomato seed.

Hemsley, A., well-known English horticultural writer, d. at London, England, Jan. 30, of cancer of the throat, a. 66 years. He was for several years correspondent of The Florists' Exchange.

Haas, Jacob, d. in Dec. 1916, at St. Paul, Minn., a. 86. Haas' vineyard was well known and said to be the finest in St. Paul. He was born in Alsace-Lorraine. Before coming to this country he was gardener to the elder Dreyfus, father of Captain Dreyfus, who had suffered so much persecution wrongly.

Hay, Norman, florist, Alexandria Bay, N. Y., d. Dec. 3. He was born in New South Wales, Australia, in 1868.

Herms, F. C., Portsmouth, O., d. Nov. 16, 1916, of heart failure, a. 80 years. He was born in Germany and came to this country when 18 years of age. He was a pioneer florist.

Henkes, Fred'k, Jr., son of Fred Henkes of Henkes Bros., Newtonville, N. Y., growers, d. March 27, a. 19. He was superintendent for the firm.

Henry, Wm., gardener of the Genesee Pure Food Co., Le Roy, N. Y., d. June 2, a. 54.

Hermann, Edward, one of the oldest and best-known florists of Baltimore, d. there July 17, a. 60, of Bright's disease.

Hillman, Geo. W., for more than 20 years secretary and treasurer of the New York Cut Flower Co., New York City, d. July 6, at his home, Flushing, L. I., of heart disease.

Holmes, Andrew B., florist, Brookings, S. D., d. Feb. 28, of heart failure, a. 69.

Hoyt, B. Terrell, well-known landscape architect, proprietor of the Hoyt Nursery, St. Paul, Minn., d. Feb. 12, of nephritis, a. 41.

Hunt, Chas., veteran flower grower of Richmond, S. I., N. Y., d. Oct. 29, of pneumonia, a. 78.

Hutchins, Rev. W. T., a pioneer in the Sweet Pea industry, d. the first week in Feb., 1917. His book, entitled, "All About Sweeet Peas," was written, and new editions are still published from the house of Burpee; 53,000 copies went out the first season. This book was really the beginning of modern Sweet Pea literature.

Jahn, Heinrich A., d. first week in August, a. 59, after a long illness, at his home in New Bedford, Mass. He had been in business as florist and grower there for many years. In 1915 he won second prize in a heating essay contest given by "The Exchange." He was born in Germany and was a member of the American Carnation Society.

Jerolaman, Henry, Hilton, N. J., known as the "Strawberry King," on account of his skill in originating new varieties of Strawberries, d. Oct. 10, a. 82.

Johnson, Hamlin, seedsman, Seekonk, Mass., d. Dec. 30, 1916, a. 92. For many years he was proprietor of a seed store at Providence, R. I.

Johnson, Henry P., gardener, Newport, R. I., d. about Sept. 15.

Johnson, Herbert W., formerly a leading figure in the Philadelphia seed trade and an erstwhile State senator of New Jersey. D. Dec. 10, 1916, a. 65. He was one of the founders of the A. S. T. S.

Keene, Cyrus R., of Cohasset, Mass., well known for his nurseries maintained there for many years, d. Feb. 17, from infirmities of age.

Kelley, Fred, florist, Kokomo, Ind., d. June 27 or 28. His body was found in the Mississineva River at Marion, Ind.

Kelly, John E., Newport, R. I., d. early in March. He was gardener on one estate for 52 years.

Kerrigan, Daniel P., employee of Wagland the Florist, Lawrence, Mass., d. March 27.

King, Lyman B., landscape gardener, at the Mount Washington Cemetery, Kansas City, Mo., d. early in April. He served in the 55th Illinois Infantry during the Civil War and later in the 8th Illinois Cavalry.

Kirby, Arthur M., for many years in charge of the flower seed, bulb and implement department of Peter Henderson & Co., New York City, d. March 26, at his home in Montclair, N. J., a. 44. Mr. Kirby prepared the firm's catalogs, and was considered an expert; was author of "Narcissus and Daffodils, and How to Grow Them." In 1914 he was elected vice-president of the American Sweet Pea Society.

Knapp, Judson, N., famous nurseryman and fruit grower of Onondaga County, N. Y., d. in January, at his home near Syracuse, a. 79. He was called "The Grand Old Man of Onondaga," and was regarded as the father of bridge grafting. He became rich by fruit growing.

Kirkpatrick, Robinson, park commissioner and landscape gardener of Nashua, N. H., d. Dec. 20, 1916, a. 55. Native of Glasgow, Scotland.

Kitchenmeister, Mrs. Addie, Highland Park, New Brunswick, N. J., d. Dec. 20, a. not given. Since her husband's death she had carried on the florist's business that had been so successfully built up.

Kroeschell, Wm. L., secretary and treasurer of the Kroeschell Bros. Co., Chicago, Ill., d. Nov. 23, 1916, a. 61. He was born in Nashville, Tenn. and after business training joined Kroeschell Bros. Co., in 1900. In trade, social and fraternal circles he was an active worker and a man of sterling qualities.

Knoch, Gustav, Detroit, Mich., well-known florist, d. Feb. 28, a. 51.

Knoll, John, retail florist, St. Louis, Mo., d. Oct. 20, a. 54, of heart failure. He was a veteran in the St. Louis trade.

Lackey, Wm., superintendent of the Daniel Guggenheim estate, Elberon, N. Y., d. March 3.

Lake, F. J., florist of Wellesley, Mass., d. Jan. 27, a. 87. He was one of the oldest florists in this section and active till his death.

Langbridge, W. C., traveling representative of the Jerome Rice Seed Co., Cambridge, N. Y., d. April 12, a. 57. He was born in Jamaica, W. I., but came to the United States when 11 years old.

Langdon, Thos. E., florist, Brooklyn, d. Jan. 4, a. 64.

Lehman, G. F., for 50 years prominent gardener and florist of Anamosa, Ia., d. the middle of February, a. 82.

Lehr, Henry M., Rose grower, Baltimore, Md., d. March 20. His father, Wm. F. H. Lehr, died only about two weeks before. Henry M. Lehr was a member of the Baltimore Florists' Club and a life member of the S. A. F.

Lehr, Wm. T. M., one of the oldest florists of Baltimore, Md., d. March 7, a. 93. In his youth he served for some time on the estate of Bismarck.

Lowden, Thos. L., florist and market gardener, Pittsfield, Mass., d. May 19.

Luther, August, florist, Kansas City, Mo., d. Feb. 27, a. 69.

Molloy, Wm. F., Wellesley, Mass., d. Nov. 7, 1916 a. 57. He was in the employ of the Waban Rose Conservatories.

Molyneux, Herbert E., a notable writer on Roses, d. at Southampton England Nov. 22, 1916, a. 48.

Muller, Alfred L., assistant Dr. John Nolan, Cambridge, Mass., famous as a landscape gardener and city planning expert d. Dec. 8, 1916, from the result of injuries in an automobile accident at Kenosha, Wis.; he was 26 years old, and son of a prominent Boston merchant.

McAllister, Alex., retired florist, Passaic, N. J., d. there Sept. 7, a. 71. He was born in Ireland

McClane, James, widely-known retail florist, Philadelphia, Pa., d. April 25, a. 68. He established his store, 41 years ago.

McFadden, Roger, gardener on the estate of Dudley Field, Hastings-on-Hudson, d. about Aug. 1, a. 78.

Mackerer, Jos., florist, Union Hill, N. J., d. Oct. 6, of heart trouble.

Martin, Thos., head salesman for Traendly & Schenck, wholesale florists, New York City, d. April 5, of tuberculosis, a. 37.

Massee, Geo., well-known botanist and mycologist, d. at Sevenoaks, Kent, England, Feb. 27, a. 66. He was a leading authority on plant diseases, and his text book on the subject is used in the United States as well as England. For many years he was principal assistant (Cryptogams) in the Kew Herbarium.

Mayo, D. R., seedsman, Knoxville, Tenn., d. Feb. 16, of apoplexy, a. 63.

Metcalf, Clarence L., florist, Brooklyn, N. Y., d. June 14, of a complication of diseases.

Miller, Miss Alice J., florist, Louisville, Ky., d. July 9, a. 61, of heart trouble.

Morrill, Fred O., florist, Bangor, Me., d. Oct. 7, a. 44, as the result of an automobile accident.

Morton, Frank S., enthusiastic amateur Gladiolus grower and prominent in American Gladiolus Society, d. early in January.

Newton, Edward W., florist, Hartford, Conn., d. Nov. 4, after a long illness a. 49. He was born in Norfolk, Va., but lived in Hartford practically all his life.

Nelson, Swain, leading Western nurseryman, head of the firm of Swain, Nelson & Sons Co., Chicago, Ill., d. Jan. 18, a. 89. He was a native of Sweden and came to Chicago in 1855, engaging in landscape gardening. In 1865 he submitted plans for Lincoln Park, which were accepted, and for the following 15 years he directed the work of developing that park and several others.

Nilsson, Wm., florist, Woodlawn, New York City, d. Oct. 11, a. 65. He was born in Sweden and came to this country at the time of the Philadelphia Centennial. He was very skillful in bedding work

Olson, Mrs. O. J., wife of O J. Olson, of Holm & Olson, St. Paul, Minn., d. about Oct. 22.

Pearson, Prof. H. H. W., director of the National Botanical Garden of South Africa, at Kirstenbosch, d. at the end of 1916. He had traveled widely and made many botanical studies and contributions.

Pappas, Gus, one of the proprietors of the Alpha Floral Co., Chicago, Ill., d. Oct. 16, a. 41. For many years he conducted a branch store at Des Moines, Ia. He was born in Greece.

Pennock, Abraham L., florist and grower, Philadelphia, d. June 29, a. 89. He had been in the florist business practically all his life and was one of the oldest florists in the country. He was the originator of the plan of placing Lily of the Valley pips in cold storage and the founder of the firm of Pennock Bros. A few weeks before his death he had celebrated the anniversary of his golden wedding.

Phillips, John, well-known Edinburgh, Scotland, nurseryman, d. Sept. 14, a. 58.

Pratt, Robt. Marion, Boston, Mass., known for his work in horticulture and floriculture as an amateur, d. Jan. 9, a. 79.

Pyle, Robt. L., treasurer of the Conard & Jones Co., West Grove, Pa., d. Oct. 3, of valvular heart failure, at London Grove, Pa., a. 75. He was also president of the National Bank of West Grove.

Rammers, Mrs. Sarah, Louisville, Ky.,, a. 76, d. early in June, of paralysis. She was the widow of L. L. Rammers and the mother of Mrs. C. E. Thompson, well known in the florists' trade in Louisville.

Rasmussen, Mrs. Geo., wife of Geo. Rasmussen, superintendent for his brother, Anders Rasmussen, the New Albany, Ind., grower, d. Feb. 6, a. 33.

Rayner, Chas. Jr., florist, formerly of Anchorage, Ky., and later of Vancouver, B. C., killed in action on the Western front in France, while serving in the British Royal Air Squadron, a. about 30.

Reed, Alden A., one of the best-known florists and growers in the Old Colony district, d. Feb. 27, at his home in Witman, Mass., a. 78.

Reed, Capt. A. H., d. at Glencoe, Minn., late in 1916. He was a pioneer of the State. He was an enthusiastic horticulturist and a member of the Minnesota Hort. Society, for which, for many years, he conducted a trial station at his farm at Glencoe.

Rey, Chas. F., florist, Glendale, L. I., N. Y., d. March 31, of nephritis a. 67.

Roche, David J., nurseryman and landscape gardener of Quincy, Mass., d. March 21, a. 81.

Ross, Charles, Westgate-on-Sea, England, veteran horticulturist and gardener, d. Feb. 4, a. 92. He was noted as a grower of Apples, and originated several new varieties.

Reis, Peter, florist, West Hoboken, N. J., d. Nov. 1, a. 74 of a complication of diseases. He was born in Germany but came to West Hoboken in 1870. His father was also a pioneer florist.

Reuter, S. J., Westerly, R. I., d. Nov. 24, 1916, a. 65. He was born in Germany educated in all departments of the florist business in which his forebears had been engaged as far back as there is any record. He came to America in 1872, and started in business, moving to Westerly in 1882. He had one of the largest establishments in Rhode Island. His specialties being Roses and Carnations.

Rupp, Nicholas J., treasurer of the John C. Moninger Co., Chicago, Ill., d. of appendicitis Dec. 27, 1916, a. 53. Mr. Rupp was a pioneer in the greenhouse construction business. In 1894, after the death of J. C. Moninger, he joined with E. F. Kurowski in buying the business from Mrs. J. C. Moninger.

Saunders, David I., pioneer florist, Washington, D. C., d. May 18, a. 69. His father, the late Wm. Saunders, was superintendent of gardens for the Department of Agriculture for many years.

Sanborn, Henry Willard, one of the earliest florists of Berkeley and Oakland, Cal., d. in Dec. 1916, a. 66.

Sawyer, Geo., Murray Hill, N. J., d. Dec. 7, 1916. He was one of the foremen of the L. B. Coddington Rose growing establishment.

Saxe John, well-known florist of Waterbury, Conn., d. Nov. 28, 1916, a. 62.

Schroeter, Bruno, florist, Detroit, Mich., d. Nov. 7, a. 77. He was born in Germany, where he studied. He came to America in 1871 and located at Toledo, O., later going to Detroit. He was noted for the high quality of stock he produced.

Schneider, Geo., president of the French Hort. Society of London, England, d. Jan. 2, a 68. For 30 years he was employed by J. Veitch & Sons of Chelsea, England. He was a member of leading European horticultural societies and in his early life a frequent contributor to the horticultural press of France and England. His "Book of Choice Ferns" is an important work on the subject.

Siebold, Mrs. Anna Theresa, wife of Julius Siebold, the Lancaster, Pa., grower, d. Jan. 2, from pneumonia, a. 51.

Seibrecht, Wm. R., manager of the Siebrecht retail flower store, New York City, d. Sept. 4, at his home at New Rochelle, N. Y., of heart disease, a. 43.

Siegel, Alex., florist, St. Louis, Mo., d. May 25, a. 60.

Simonson, Henry C., florist, Brooklyn, d. there Dec. 8, 1916.

Silvester, Rich. Wm., for 20 years president of the Maryland Agricultural College, d. during the first week in January, a. 59. He was a noted student of agricultural problems and a well-known lecturer on horticultural subjects.

Smith, James, grower and retailer of plants and cut flowers for many years at Baltimore, Md., d. Sept. 8.

Snyder, Samuel, retail florist, New York, d. Dec. 17, 1916, a. 40.

Strail, Fred Newell, d. in Chicago, Dec. 1, 1916, where he was born 47 years ago. He was well known in retail florists' circles.

Snyder, Philip H., who for over 20 years handled collections for C. B. Thompson & Co., Louisville, Ky., d. early in March, of pneumonia, a. 81.

Stielow, Fred, well-known grower for the Chicago market, d. at Niles Center, Ill., Oct. 25, a. 75.

Stoutenborough, Russell B., proprietor of "The Flower Shop," Paterson, N. J., d. Sept. 9, of heart failure, a. 39.

Stredwick, James, a noted raiser of Dahlias, St. Leonards, England, d. about the first part of May.

Swanson, John H., Chariton, Ia., retail florist, d. Oct. 14, a. 58.

Tricker, Christopher, brother of the late Wm. Tricker of Arlington, N. J., d. in New York City, Nov. 22, 1916, a. 52. For ten years he was bookkeeper for Peter Henderson & Co.

Teweles, Ludwig, president of the Ludwig Teweles Seed Co., Milwaukee, Wis., d. of heart failure, July 8, a. 76.

Toler, John F., florist of Holywood Cemetery, d. April 27, at Atlanta, Ga., a. 73.

Valentine, J. A., president of the Park Flower Co., Denver, Colo., d. Oct. 5, a. 58, his death occuring from an automobile accident. He was father of the Florists' Telegraph Delivery Ass'n and was intrusted with the drawing up of that organization's constitution and by-laws. He was also an early member of the Florists' Hail Ass'n and president of the S. A. F. in 1908. In 1911 he was made president of the American Carnation Society. He was born in Iowa and graduated from the State Law School at Iowa City, soon after going into railroad construction work. In 1895 he became president of the Park Floral Co.

Vestal, Jos. W., pioneer florist, Little Rock, Ark., d. Aug. 6, a. 82.

Vilmorin, Philippe de, head of the world-renowned French seed house of Vilmorin-Andrieux & Co. of Paris, d. about July 3, a. 44. He was the organizer of the noted Fourth International Conference of Genetics, held in Paris, Sept. 18 to 23, 1911. He was secretary of the last International Conference on Genetics and a life member of the American Genetic Ass'n. He served as interpreter in the French Army from the time of the beginning of the European War, in 1914.

Wallace, William, d. about May 1, a. 75. For nine years he was gardener for Carrie Monroe Terry, of Phoebus, Va. He was well known among Brooklyn, N. Y., florists and gardeners.

Weeber, Chas. G., seedsman of Brooklyn, N. Y., formerly of the firm of Weeber & Don, New York City, d. May 8, of heart failure, a. 74. He had retired from the firm in 1901. He was well known in the seed trade.

Wettig, Arthur, florist, St. Paul, Mo., d. in January, from tetanus poisoning, a. 44.

Walker, Prof. Ernest, former State horticulturist of Alabama and noted botanical student, d. at Bolling, Ala., Dec. 6, 1916. He was 55 years of age. He was secretary of the State Horticultural Society of Kansas, and had an experimental orchard.

Will, Oscar H., pioneer seed grower, Bismarck, N. D., d. in September.

Weigand, John, who had conducted a large florist's establishment at Secaucus, d. at Weehawken Heights, N. J., Oct. 12, 1916, a. 81. He was born in Bavaria.

Wilson, Geo. L., retired florist of Malden, Mass., d. in January, a. 71.

Wills, Robt., manager of the State Nursery Co., Salt Lake City, Utah, d. Sept. 5, a. 61. He was born in Ireland.

Winterson, Thos. B., Chicago, Ill., d. early in June, a. 36. He was a brother of E. F. Winterson, wholesale seedsman and florist at Chicago, and occasionally was connected with his brother's business. He was killed by an express train.

Wolff, Otto Wm., florist of Corfu and Batavia, N. Y., d. Dec. 17, 1916, of softening of the brain, a. 40 years. Mr. Wolff was born in Germany. He was a veteran of the Spanish-American War.

Woodruff, Wilford Baker, veteran florist, Westfield, N. J., d. Nov. 10, a. 67, after a long illness. He had been in the florists' business for 47 years.

Wrege, Chas., florist, Jersey City, N. J., d. May 30, a. 35.

Zane, Wm. F. grower, Wheeling, W. Va., d. June 17, a. 67.

Youell, Henry, florist, Syracuse, N. Y., d. about Sept. 20, a. 73. Mr. Youell was secretary of the American Gladiolus Society from 1919 till his death. He was one of the oldest readers of "The Florists' Exchange," and for many years had been its Syracuse correspondent. He was also president of the Syracuse Florists' Club. Mr. Youell was born in Yarmouth, England.

Young, John, gardener in the employ of Col. Samuel P. Colt, president of the U. S. Rubber Co., d. June 9, at Bristol, Conn., a. about 80, of apoplexy. He was a native of Scotland.

Youngs, Harry H., nurseryman, Dayton, Ohio, d. Aug. 4, a. 69.

Yunker, Mrs. Eliz. W., garden enthusiast, d. in February, at her home in Louisville, following a stroke of paralysis. Mrs. Yunker planned some of the handsomest gardens in the city and her daughter, Miss Emilie, is school garden director of Louisville.

Zeiner, Geo. K., florist of Wantagh, L. I., N. Y., d. Jan. 13, of pneumonia. He was a veteran of Co. G. 58th Regiment, N. Y.

Zuber, Vincent J., grower, Whitestone, L. I., N. Y., d. Nov. 2, a. 75. He was born in France, but came to Whitestone about 40 years ago. He was a specialist in the growing of Ulrich Brunner Roses and for years produced the finest blooms of that Rose coming into the New York market.

Using the Planet Jr.

"Work while it is day, for the night cometh wherein no man can work."

Section V

Special Articles

The Round of the Year in the Seed Trade

By Charles Johnson

COMPARED to its healthy and satisfactory condition today, the seed business in America 15 or more years ago was in a quiescent state. Then outside of the various metropolises of the country, the number of regular retail seed stores was, comparatively speaking, quite inconsiderable, and they were located few and far between.

In the smaller cities at that period most all the business in bulk seeds, especially that of vegetables, was confined as a side line to the leading grocery, drug, hardware, flour and feed and general merchandise stores, stocks being carried by them in small quantities, very much cut up, varying according to the extent of trade done by each store, but as a rule the attention given by these stores to selling seeds was with the indifference that is usually manifested toward all side lines.

But today in 1917, we find at least one well equipped seed store, with up-to-date fixtures, drawers and bins, in every small city situated in the midst of a rich, populous agricultural territory, in all the States of the Union, and Canada also.

Numbering perhaps upward of a thousand these many new stores are all flourishing, bringing their respective proprietors a good, comfortable living, indeed quite a few of them producing much more than a living. Hardly a fortnight or so passes but another new seed store is announced.

As just indicating the expansion of the mail order seed houses in our country within the past decade, the mere statement will suffice that all these mentioned new seed stores issue a catalog, circulated by mail. Many of these catalogs are as elaborate in their make up, as handsomely illustrated and printed as are the catalogs issued by the best of the older mail order seed houses.

Special Articles in the 1917 Edition

The following articles appeared in the 1917 edition of this Annual:

Contrary to the foreboding that was to be expected, this considerable increase in the number of retail seed stores and mail order houses, has been beneficial to the trade, and has produced a very much larger and more profitable demand for seeds of every description. A greater interest in gardening and farming has been created in communities by the simple presence of a seed store where previously no such store had existed. A greater variety of vegetable, flower and farm seeds has been demanded, and acreages under culture have been considerably increased.

This new life has put the entire seed trade, wholesale as well as retail, upon its mettle. The quality of the seeds put upon the market has been vastly enhanced, service has been rendered better, the tone. reading matter, illustrations, cover coloring of catalogs have been changed for the better, the wording, illustrations, and coloring used in the printing of the seed packets have been altered for the better. There has been meritorious improvement along the whole line.

As intimated, quality with seeds is now the order of the day. The buying of seeds, therefore, in a modern, well regulated seed store has become a very serious matter. Prices play an unimportant part with the experienced proprietor. With him that which counts in the giving of an order or contract for supplies is practically 100 per cent. confidence in the grower or seller.

He usually places his orders at the time when the various seed growers or their representatives perform their annual rounds. Before the war, this commenced about October 20 and ended generally about Jan. 10, with the French, English, German, Holland and Danish growers, who timed their visits or solicitations to securing of contracts before arrival of the sowing or planting season. The Pacific Coast seed growers made it a rule to commence their visits to the trade about Dec. 1, and to finish up in February or about March 1. The Middle West and Atlantic Coast growers, whose specialties comprise Peas, Beans and Corn, vine seeds of all sorts, Tomato, Pepper, Egg Plant, Turnip and some Cabbage, start their visits and make their offerings usually later than do the foregoing mentioned, and wind up their booking of orders shortly before Corn-planting time in the North.

As it is he who must bear the brunt of responsibility for the character and reputation of his business, the owner or proprietor himself

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Special Articles in the 1916 Edition

The following articles appeared in the 1916 edition of this Annual:

Accounting, Simple Method of
Birds, Our Wild
Bunching Flowers and Foliage
Business, Starting Into. Some Considerations
Constructing in Concrete
Florist's Window as an Advertising Medium
Foliage, Prepared, for Florists' Use
Hardy Garden Flowers, Best Hundred
Orchids, Lesser Known Commercial Varieties
Refrigerator, What Do You Know About Your?
Retail Florist—The Year Round
Trees and Shrubs, Ornamental Flowering
Weeds, Fifty Worst

of the small seed store, always prefers to do his ordering personally, seldom trusting to a clerk.

But in the extensive establishments, especially in the great wholesale or jobbing houses, when the proprietor or his partners are occupied with the more important work of supervision, the buying or purchasing is placed in the hands of a seed buyer. This person is a special confidential clerk, selected for his long practical experience in the seed business. He is chosen because of a clear, patient head for details, because he is possessor of a matured mind, sound judgment, and keen powers of observation. He thoroughly understands all the arts of growing seeds, and has a complete knowledge of the seed growers in the world. In his duties, he has the addresses of these growers tabulated or cataloged, and he has also tabulated in concise, ready, handy form all data pertaining to prices, quotations and offerings on contract or surplus, as issued by and received from the different growers and the most important of the wholesale or jobbing houses.

Another of his duties is to keep a special book or record of contracts or purchases. This book is a complete history of every purchase in the course of the business year. Each variety has a space in the book to itself. The best form is to have the book ruled and printed with proper headings printed over the ruled columns. These columns are ranged side by side, headed variously, "on hand" or "carried forward from last year," "date contract," "grower or seller," "date invoice," "date arrival," "quantity purchased," "quantity delivered," "price," "duty," "freight," "add'l expense," "total cost," "total full quantity," "quantity unsold end of season," "total sold," "vitality delivery," "vitality following season."

An extra column or two, with heading blank, may be added for other purposes.

Another of his duties is to maintain a constant touch with his growers and sellers while crops are growing till harvest and shipment, receiving from time to time reports of progress and conditions.

Also his duty is to make stated visits to the trial grounds, where he notes in the book of record of the superintendent of the trial grounds, his own personal examinations, comparisons and views of the different tests, which book or a duplicate of it, is finally retained on his own desk for reference.

He secures reports of the vitality tests after they have been finished in the testing room. These tests are made, first on arrival of the stock

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Special Articles in the 1915 Edition

The following articles appeared in the 1915 edition of this Annual:

Common Points of the Law
Productivity of Carnations
Hints on Greenhouse Construction and Heating.
Starting into Business as a Grower
Hydrocyanic Acid Gas as a Fumigant
The Use of Cement by Florists
Development in the Middle West
Business Suggestions for the Retailer
Florists' Delivery Cars

from the grower or seller, and again if any remains unsold, before it is offered for sale the following season; the second test for all carried over stock is made usually at close of Autumn. These vitality tests he notes in his book of contracts, in the respective columns for vitality.

Performed properly the position of seed buyer in an extensive seed establishment is no sinecure. It occupies one man's entire time.

In a large business, it is a question of doubt, which after the general manager, is the most responsible position, that of the seed buyer or that of the secretary or head bookkeeper of the concern. Most of the older and more experienced merchants hold, that of the two, the position of secretary or head bookkeeper (secretary is only a fanciful

"Give-Away" Day at Stevens' Floral Store, Shenandoah, Ia.
The children receive a gift of plants, which they grow on. A good way to encourage a school of young gardeners

title—the position is virtually one and the same) is the more responsible. For as manager of its finances, the head bookkeeper is the eye of the whole establishment. Upon him, in fact, rests the major part of the house's success or failure. He must guard the purchases and sales and note that they do not run in excess of a going concern's actual cash capital. No business can or does succeed if more business is attempted than the actual amount of its cash capital warrants. Bankruptcy is bound to result. The exception proves the rule. The head bookkeeper must watch this faithfully and in case of danger must issue warning to the proper authorities. It is also his duty to watch carefully the extension of credits to customers and warn when necessary. He should be a close collector of accounts and make it a point by conservation to provide for the prompt payment of bills, drafts and notes. He must also endeavor to curb all extravagances in expenditures and overdrawing of accounts. He should render, weekly or monthly if possible, quarterly at least, a statement of the profit and loss account. Certainly the head bookkeeper's position is a very responsible one.

The manner of conduct of its correspondence in a large or a small seed establishment, has a bearing of vital importance upon its successful administration. All letters should receive immediate and careful attention. The best rule is to answer the same day of receipt. If there is occasion for delay and a full reply cannot at once be given, then a simple, courteous acknowledgement of receipt should immediately be made saying full reply will follow.

In the good old days before the typewriter and the advent of the office stenographer, exceeding great care was bestowed upon business correspondence. In those times courtly pen-written letters were the "silent salesman," and highly successful they were. It is a pity a book has not been printed of those old-fashioned, precise, beautifully composed business letters, to serve as a model for the modern correspondent. Composition of a letter by pen insures a superior, a more grammatical and logical arrangement of what is said; the language which flows to the assistance of the slow pen is purer, smoother, more courteous than that which issues by the employment of dictation. Haste in dictation too often produces a lackadaisical, weakly phrased letter, or a too curt one. There is no question of doubt that many a customer has been driven away and many an order lost in consequence of brutally curt or weakly phrased letters hastily dictated.

There is a psychology in letter writing which it were well to observe. The paper itself on which the letter is written—either by pen or typewriter—becomes, along with the words and sentences, impregnated with the mood or temperament of the writer or dictator, and his emotions or state of mind are electrically conveyed to the addressee. It behooves, therefore, in writing or dictating, that one compose himself, and inspire a spirit of kindness and courtesy into the letter. This spirit will be imbibed when the letter is read by the addressee.

But after all personality is that which counts most for success or failure in life. In business circles this is especially noticeable in the singularly contagious effect that the personality of the proprietor, or the individual who rules the store or establishment, has upon the personalities, for the time being, of his respective employees down to humble office boy. Just as the personality of the general in command affects the atmosphere of the men in his army for enthusiasm or lack of it, for confidence in him or lack of it, for victory or for defeat, so does the personality of the head of a business concern affect the atmosphere wherein he rules, and thus leads the business to success or failure, according as his own personality be pleasant or disagreeable, good or bad.

How significantly this gigantic world-war has demonstrated to us all, in the many noteworthy changes taking place, that the difference is only in degree between the expression "there is no sentiment in war," and that similar undemocratic one, old as the hills, "there is no sentiment in business." When democracy achieves its glorious victory over autocracy, as it shall and must, let us all hope in the new order of things that shall transpire, that there will be a solid and firm declaration, that sentiment must be put into business, and that henceforth and forever humanity must prevail in all affairs of trade and commerce.

Some Suggestions for Shippers

By H. D. Darlington, Flushing, L. I.

THE shipping of plant stock, principally by express, is becoming more of a problem every year to the average florist. Few of us can dispose of all our product in our immediate vicinity, or it may often be more profitable to ship to other sections.

But if we are shipping or receiving stock by express, I think most of us will agree that there is room for considerable improvement. I have usually found the officials of the large express companies most courteous and sincerely trying to give us the best possible service. They are often ready with practical suggestions of value to the shipper. How often does one receive a shipment of excellently grown stock in a badly bruised condition, yet which has traveled less than 100 miles. Compare it with the average case of plants from abroad. The comparison makes one think very seriously.

When an order of plants is moved into the packing shed, first see that all the stock is well watered, also that a duplicate itemized invoice is with the order. This is a help to the packer as to the size and number of plants in the order. One copy should be returned to the office properly checked up to show that the order is completed, or the portion of it that is about to be shipped. The copy of the invoice which the packer holds should be fastened to one of the plants after it is tied with paper. If you are packing your plants standing, to be crated in, put the plant with the invoice in a prominent place in the crate. If it is a closed case and the plants are lying down, leave the plant with the invoice until the last, so it will be packed on top. One reason for this is that should the tag become lost, or the address obliterated, the express people can easily find from whom and to whom the shipment is made by opening the box. This often saves valuable time.

Paper pots are a great help in shipping pot grown stock. They save in weight and are easily packed. Newspaper is as cheap and as practical a material as one can get for wrapping plants, only don't stint it, especially in cold weather, and see that your newspapers are all spread out before packing, especially at holiday time. This spreading of the paper should be done by the cheapest labor you have.

Some growers prefer to pack plants standing and crate-in the tops; others to lay them down in a closed box. Both methods are good, but whichever you adopt, use plenty of cleats and see that they are securely nailed. In cold weather make sure that the cases are well lined; it pays.

After your case or crate is packed tack on your tag and put the tag on the end of your case, not on the top. Did you ever notice an expressman loading a wagon or truck? As he receives the boxes, especially if they are closed cases, they are shoved one on top of the other as high as he can get them. This is repeated at the express car, and oftentimes before your goods leave the home town, many of the tags are badly torn. This can often be avoided by putting the tag on the end. It is necessary in New York State to mark plainly on the tag the value of the goods. With the tag should go the Government

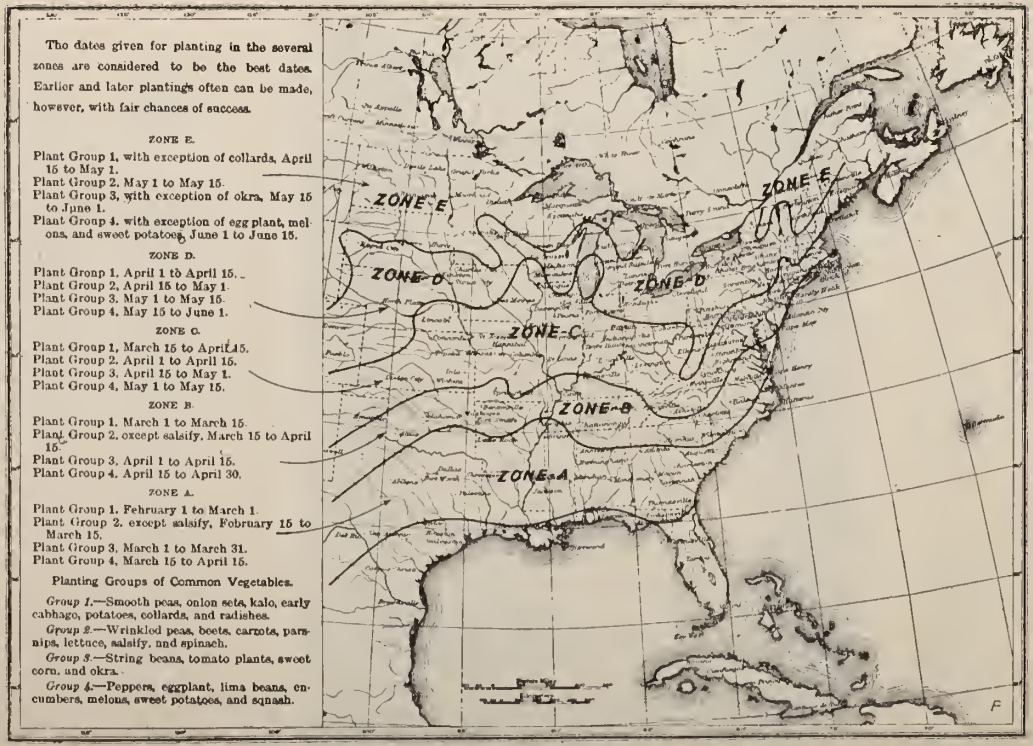
inspection certificate. With greenhouse grown stock there seems to be some uncertainty as to inspection and value of certificate; I mean that some inspectors hold it to be necessary, others that greenhouse pests are not included in these regulations, but as various States have different regulations, some more stringent than others, it is best to have a State certificate on each shipment of plants you send out.

A marking ink is probably the best to mark your address with, but if the top boards are smooth, a heavy black marking crayon answers well and is quicker. It is also a good plan to stencil the firm's name on

Window Boxes S hould Be Part of All Suburban and Country Homes. Florists Can Do Much to Foster This

the side of the case and in cold weather, if it is greenhouse stock, stencil with the address, "Greenhouse Plants—Perishable," or "Keep From Frost," or some mark to show the express people the nature of the contents of the case.

If the shipment consists of more than one case or crate to one address see that each case is marked plainly with the address and the intimation, "on 2" or "on 3," or as the shipment may be. This prevents the cases getting separated. Personally, I have found it well to leave the routing to the express people, but if you wish you can get from the express companies route books showing every town in the United States with express service, and just what companies cover each section, cost and other information; or if the consignee wishes the goods by a par-



Planting Zones for Vegetables in Eastern Half of United States
(Prepared by the Dept. of Agriculture)

ticular express company or route, mark it so on the box and on your express receipt.

Many small plants or cuttings are now sent out in the various forms of heavy corrugated paper boxes. These make neat packages and are a convenient method of handling small shipments. As soon as your signed express receipt is turned into your office, a postal card or other notice should be sent to the consignee to notify him the goods are under way.

Vegetable Crops Under Glass

By E. F. Stoddard, Maryland State College

DURING the past year many florists have grown vegetable crops under glass. The amount of greenhouse space devoted to these crops is considerably larger this year. This is indicated by the large number of letters asking for information about vegetables under glass, which have been received from florists. To meet this call from our florist friends, this brief article has been prepared to outline some of the most important essentials in growing vegetables under glass, and to give sufficient detail to guide them in growing vegetables in their own houses.

The most important vegetables that are grown in commercial greenhouses are Lettuce, Tomatoes, Cucumbers, Radishes, Parsley, Cauliflower, Asparagus, Peppers and Rhubarb. Those that require rather high temperatures are Tomatoes, Cucumbers and Peppers, while the others may be grown at much lower temperatures. This naturally divides them into two groups and determines largely in which seasons of the year they may be grown profitably. Both Fall and Spring contain the warmest months during the forcing period, during which time it is easier to maintain higher temperatures for Tomatoes, etc. The cold Winter months are selected for crops which will grow under cool conditions, such as Lettuce, Cauliflower and Radishes.

Rotations

The following plan will show how these vegetables may be arranged in a rotation which is used by many growers:

1, Tomatoes, Fall crop; 2, Lettuce, Winter crop; 3, Cucumbers, Spring crop.

Cucumbers are grown as a Fall crop by a few growers. In this rotation some men grow two crops of Lettuce before planting Cucumbers. In this case, the Cucumbers mature during the late Spring and early Summer. When one crop of Lettuce is grown, the Cucumbers follow immediately and Lettuce plants may be planted between the Cucumbers. This half crop of Lettuce will mature before the Cucumbers need all the space.

Another rotation is as follows: 1, Lettuce, Fall crop; 2, Lettuce and Radishes, Winter crops; 3, Tomatoes or Cucumbers, Spring crops.

About three or four crops of Lettuce may be grown before the Spring crop is planted. Radishes may be grown in the Fall if desired,

and Lettuce plants may be set between the Tomatoes just as soon as they are planted in the house.

A rotation which the writer used last year in a new house that was not heated is as follows: 1, Lettuce, Radish and Parsley, Fall crops; 2, Lettuce, Radishes and Parsley, Winter crops; 3, Cauliflower, Spring crop.

This year the same house will be planted with Lettuce in the Fall, Chinese Cabbage in the Winter, and Cauliflower in the Spring. Growers who are using raised benches, can grow Rhubarb under the benches while Lettuce or Radishes are on the benches. Parsley may be grown around the edges of benches or beds while Tomatoes or Cauliflower are growing. Parsley simply grows a little faster under Tomato temperature. Other rotations may be arranged using all vegetable crops or combinations of vegetable and flowering crops.

When to Start the Crops

Tomatoes for the Fall crop which will be planted in the houses about Sept. 1, should be started about July 1. Some Northern growers sow as early as June 20. They may be started in flats or outside beds. The soil should be porous and not rich at first. The seedlings will be ready in two weeks to transplant, 2in. apart, in other flats or beds. Three weeks from this time when they are 4in. to 6in. tall, they will be ready to transplant to 4in. pots where they will remain until Sept. 1. The plants must not be grown too fast by overwatering or rich soil. If necessary, the pots may be moved farther apart to give each plant more space and thus develop stocky plants.

Planting Table for Greenhouse and Frame Crops

Kind of Vegetable	When to Sow	Where to Grow Plants	Successive Sowing Days	Time required for crops: To Grow Young Plants	Time required for crops: In the Growing House	Planting Distances	Temperatures: Day	Temperatures: Night
				Days	Days			
Lettuce	Aug. 1-5*	Flats or beds	7	30-45	30-60	8″x 8″ 9″x 9″	60	45-50
Cucumber	July 1	Flats				16″x30″*		
Cucumber	Jan. 1-20	2″Pots-4″ Pots		55-65	120-130	15″x96″	70-75	60-65
Tomato	July 1	Flats						
Tomato	Dec.24 to	4″ Pots		53-62				
Tomato	Jan. 20				120	18″x18″*	70	60
Radish	Sept. 1*	Growing house	7		30-35	1″x4-10″	60	45-50
	After*	Under benches				Close		
Rhubarb	Freezing	Frames	30		70-84	together	55-65	50-55
Muskmelon	July 1	Flats—2″ Pots	Spring					
Muskmelon	Jan. 1-20	4″ Pots	Crop 14	55-65	120-130	16″x32″	70-75	60-65
Carrot	Sept. 1	Frames	14		70-84	1″x10″	60	45-50
Beet	Oct. 1	Greenhouse						
Beet	Jan. 1	and Frames	10	21	42-63	2″x10″	60	45-50
Turnip	Jan. 1	Frames	10		56-63	2″x10″	60	45-50
Beans	Mar. 1 to							
Beans	Apr. 15	Frames	10		56-63	4″x22″	70	60
Parsley	Sept. 1	Greenhouses						
Parsley	Jan. 1	and Frames		28		8″x 8″	60-70	45-50

*See Cultural Directions.

On beds or benches, the plants are planted usually 18in. to 20in. apart each way and trained upright around strong twine or lightweight sticks to overhead wires. All side shoots are removed and the plants must be shaken at intervals of a few days during sunshiny weather to aid pollination of the flowers. As the plants grow, some of the lower leaves that touch the ground should be removed and when the fruits are reaching a good size the pruning should continue gradually from the bottom upward to permit sunshine to ripen the fruits and to aid in a good circulation of air. The entire compound leaf must not be removed at one time. It is best to remove one-third of the leaf at intervals of four or five days. About four months in the greenhouse are necessary to grow plants 6ft. tall and to ripen fruits. The best temperatures for Tomatoes are 60 deg. F. at night and 70 deg. during the day. Tomatoes will begin to ripen in 50 to 65 days after they are planted in the growing house. If plants on raised benches are not grown more than 5ft. tall, the crop may be harvested in less than four months.

Lettuce

The Lettuce crop which is planted after the Fall Tomatoes, about Jan. 1 to 5, is started Nov. 16 to 20. It requires longer to grow the plants at this season of the year because the days are shorter and the weather is often cloudy in many sections. Loose-leaf Lettuce is planted 7in. to 9in. apart each way, while head Lettuce requires a little more space. In four or five weeks the Lettuce will be large enough for some markets, while five to seven weeks at this season of the year may be needed to grow a larger head for other markets. In case a second crop of Lettuce is to be grown or if plants are to be set between the Spring Cucumbers or Tomatoes, this crop of Lettuce should be started about Jan. 1. Growers who are serving small markets and cannot sell the entire crop in a short time, may sow small quantities of seed at intervals of one week from Nov. 16 to Jan. 1, and thus have a constant supply. A crop of Radishes could be grown on some of these small plots, while the later Lettuce plants are coming on. The temperatures for Lettuce are 45 to 50 deg. F. at night and 60 deg. during the day.

In the Fall and Spring, a crop of Lettuce may be cut from the growing house in four to eight weeks, depending upon the size of the plant that meets the market requirement. Since the Winter days are shorter and some sections have considerable cloudy weather, about one to one and a half weeks more time will be required to grow the Winter crops.

The first Fall crop of Lettuce which will be planted in the houses about Sept. 1, should be started in flats or beds about Aug. 1 to 5. In order to have a succession of crops throughout the Fall and Winter until the Spring crop of Tomatoes or Cucumbers is planted, Lettuce seed must be sown every week. This will provide plants of all ages and a constant supply to replant a bed or bench as soon as a crop is cut. Since Lettuce requires a very rich soil, plenty of well rotted manure should be added to the soil and, if necessary, applications of nitrate of soda to encourage a rapid growth.

Cucumbers

Cucumbers or Tomatoes intended for the Spring crop to be planted in the houses about March 7 to 15 must be started Dec. 25 to Jan. 1. Cucumbers are started in a flat or bed and the young seedlings pricked out into 2in. pots. These pots must be plunged to provide a constant supply of moisture at the roots. When the roots begin to fill the pot they must be shifted to 4in. pots and plunged again. Porous soil and care in watering between the rows are necessary to avoid damage from damping-off fungus.

As soon as the roots have started to fill the pots they must be planted in the greenhouse. Any check in growth is harmful. There are two methods of planting Cucumbers, namely, the arbor method and the upright method. The arbor method consists in planting the Cucumbers 14in. to 18in. apart in the row and the rows 2ft. to 3ft. apart. They are trained to single stem and no laterals are allowed to grow until they have reached an overhead arbor system of wires and twine. In the upright system, the plants are set 12in. to 18in. apart in the row and the rows 3ft. to 10ft. apart. The plants are trained to a single stem but the laterals are allowed to develop one or two flowers and then their terminal buds are pinched. Some growers train the plants erect, while others train them on a slant like an A-shaped trellis, which requires the rows to be farther apart. The flowers must be pollinated with bees or by hand. The temperatures for Cucumbers are 60 to 65 deg. F. at night and 70 to 75 deg. during the day. A crop of Beets may be grown between Tomatoes or Cucumbers if desired.

A late Spring crop may be started about Jan. 25 and planted in the houses about April 1. The Fall crop of Cucumbers must be started July 1 to 5 and planted in the houses late in August.

Radishes

Plenty of seed should be kept on hand for planting at any season of the year. The round varieties are the ones used for forcing. In the Fall and Spring a crop may be grown in 25 to 30 days, while during the Winter months 30 to 35 days will be required. The small varieties may be planted in rows 4in. to 12in. apart depending upon the method of cultivation. The plants may stand one inch apart in the row. Screening the seed and planting only large plump seed will insure quick germination and a good crop.

Growers who plant Lettuce 9in. apart can mature a crop of Radishes between the Lettuce before the Lettuce needs the entire space. Both crops are planted at the same time. Radishes may be grown as a companion crop with any other cool crop. The temperatures are the same as for Lettuce. Radishes do not want a soil rich in nitrogen, since this will develop the top at the expense of the root.

Parsley

This crop may be grown alone or in the same house with almost any other vegetable. It will stand low temperatures and merely grows more quickly in higher temperatures. It may be planted in a section of a bed alone, or the plants may be planted around the outside of a

bed in which Tomatoes, Cucumbers or Peppers have been planted. It is surprising how much money a small amount of Parsley will bring in.

Other Vegetables

Cauliflower, Asparagus and Peppers are crops which require experience to handle them properly. It would be better for those not familiar with vegetable forcing to try these crops on a small scale before risking a large planting. Rhubarb may be grown easily under benches. The roots must be frozen or put in cold storage for two weeks before they are used for forcing. Under the bench, the roots

Dates When Killing Frosts May Be Expected

should be put as close together as possible and enough soil placed between them to insure a constant supply of moisture. Any poor soil mixed with sifted coal ashes may be used. The best temperatures are about 45 deg. to 60 deg. F. The stalks will be ready for pulling in 28 days, and at the above temperatures the pulling season will continue for eight weeks when large roots are used. The roots should be four to seven years old for the best results.

Frame Crops

There are a great many growers in different parts of the country who do not have greenhouses, but who use hotbeds and coldframes to grow their plants, and certain crops to maturity. Vegetable crops which may be grown profitably in frames are Lettuce, Radishes, Carrots, Beets, Turnips, Beans, Parsley and Rhubarb. Other vegetables which are less important commercially are also grown in frames.

Growers who are operating frames for other purposes are already familiar with the management of frames. The same principles such as care in watering, proper ventilation and control of temperatures will apply to vegetable crops. Since there is less air space above crops in frames than in greenhouses, sudden changes in weather will affect conditions in frames quickly unless they are protected. Crops that are planted in frames which are heated with hot water or steam pipes, may be grown in approximately the same time as required in greenhouses. Crops planted in manure-heated hotbeds or coldframes which derive their heat from the sun, will require one to two weeks more time to mature the crops.

Lettuce and Radishes may be started in the same way as suggested for greenhouse culture. Carrot seed should be sown about half an inch deep in double rows one inch apart and 10in. between the pairs of rows. The plants are thinned to 2in. apart. Varieties having small tops and roots are used for frame culture. A crop of Radishes could be planted between the rows of Carrots and harvested before the Carrots need all the space.

Beets may be grown at the same temperatures as for Lettuce. The seed is planted in rows 10in. to 12in. apart and the plants thinned 2in. to 3in. A crop of Radishes may be grown between the Beet rows. Beets may be started close together in beds and the seedlings transplanted farther apart in frames. Beets require eight to nine weeks. Early round varieties are used. Turnips may be grown in the same way as Beets except Turnips cannot be transplanted easily.

Beans are sometimes grown as a Spring crop. They are not as profitable commercially as some other crops, but many private gardeners grow them. They may be started between Lettuce in the Spring in rows 21in. to 24in. apart and the sash removed when the danger of frost is past. Higher frames will be needed if the crop is grown to maturity under glass. Bush varieties are used.

Parsley may be grown all Winter with very little trouble. It will be very profitable where there is a demand for this product.

Muskmelons and Cucumbers may be planted in temporary frames

Patent Tree Digger Used By the East Grand Forks Nursery in Minnesota

in the Spring at the distances required for outdoor cultivation. When the sashes are removed after the danger of frost is past, the plants will be quite large and will produce the earliest outdoor Melons. This is profitable commercially and provides a delicious early product for the home table.

Seed and Nursery Catalogs

Some Friendly Criticisms and Suggestions

By Joseph H. Sperry

IN the first place I am going to take off my hat and make my best bow to those seedsmen and nurserymen of this country who annually publish catalogs. I have been reading these catalogs for the last 25 years or more, and I am increasingly impressed by their steady improvement in scope, in descriptive matter, and in wealth of illustration. Nevertheless, perfection is ever a rare attainment, and it has not yet been reached, it seems to me, in the making of seedsmen's and nurserymen's catalogs, and the writer in a most friendly spirit begs leave to make a few criticisms and to add to those a few suggestions as his contribution toward the making of complete and perfect catalogs. We use the words complete and perfect advisedly, for the incompleteness and the imperfection of some of the very best catalogs now issued will be the main topics of our friendly remarks.

We will begin with the catalog covers. This is eminently an age of illustrators and illustrations. Many catalog covers lack illustration, and are painfully plain and severe in their appearance, other covers are illustrated with vegetables or flowers, or with garden and lawn scenes, or with business-buildings, but most of these lack human life. Every flower or vegetable garden implies that there is a gardener and a family who love the flowers, and relish the vegetables. Every garden, or lawn, or business-building illustration on a seed or nursery catalog should, therefore, have in it human life, as indeed some of them, we are pleased to say, now have. Have some human life in the illustration in some posture any way, even if it is nothing more than a gardener coming out of the garden carrying a dead hen by the legs, or a boy sneaking out of the back garden gate with a fish pole and a box of angle-worms. I think that we would all understand at once what the hen had been doing in the garden previous to her demise, and at what value relatively the boy held the joy of pulling weeds and of fishing. This leads us to say that a little touch of humor in the illustration of catalog covers would do no harm, but, if the seedsman or nurseryman fears that the shock of such an illustration would be too great for his customers, he could try its effect on the back cover first, and if he heard of no serious results from it, he could venture a little humor on the front cover in the next season's catalog. For example, a picture of a man and a boy bringing out of the field a big Mangel Wurzel, with a look on their faces showing they had about all they could carry, and with a caption underneath: Raised from ————'s Seeds, would probably need no explanation, and would not hurt greatly the non-humorous people. Other cover illustrations, whose humor should be

not too pronounced, and certainly never coarse, will readily suggest themselves to those who issue catalogs. The humor, whatever it be, should always suggest the excellence of the seedsman's seeds or the vegetables and flowers grown from these, in short, be a humor such as will increase sales.

The covers of not a few catalogs are detachable, not that the seedsman contracts to have them so, but because the printer's binder does not do his work well, and, after a little handling by seed buyers into whose hands the catalog comes, the covers and catalogs part company. The covers of a catalog should be so firmly attached to it in some way that they cannot be separated from it, unless they are torn off.

The novelties which the seedsman is introducing in vegetable seeds, flower seeds and plants are usually, though not always, all given a position in the front of the catalog. It would be more systematic to place the vegetable seed novelties just before the standard varieties or general list of vegetables, and the flower seed novelties just before the standard varieties of flower seeds, and to follow the same arrangement with the plants, both the ornamentals and small fruits. In some catalogs this system is now followed. The pages devoted to novelties should have a heading: Novelties in Vegetable Seeds, or something similar, and the first page where other vegetable seeds are offered should have a heading: Standard Varieties of Vegetable Seeds. Some catalogs use in featuring their novelties, paper of a different color; this indicates clearly which are novelties and which standard varieties, but gives the catalog, it seems to us, a rather cheap, flashy appearance.

In seed catalogs, a page or two could well be devoted in the vegetable seed part to directing beginners in gardening how to prepare and fertilize the soil, and how to plant vegetable seeds, and in the flower seed part instruction could be given about soil preparation, and fertilization and the planting of flower seeds. Most gardening is poorly carried on from start to finish. Nursery and plant catalogs also should contain definite information of a similar nature, with the exception that it should give careful instruction as to the transplanting of plants and trees.

Seed catalogs should contain a few plans for both vegetable and flower gardens, and for the two combined. These plans should not assume that all gardens are either square or rectangular in form; some garden plots are in the general form of a triangle, or in some irregular form. A plan for an irregular shaped garden would be helpful and suggest plans for other irregular gardens of other shapes. These garden plans should, of course, be drawn on a scale, which should be given with the plan, and should show the exact position of the vegetables and flowers, preferably through the placing of the names of these on the plan, or by a key accompanying each plan. Some one will say that this will hurt the sales of garden books, and that it is outside of the province of catalogs. We believe that a little instruction through brief garden articles and garden plans will, on the contrary, encourage beginners in gardening, and help them to enough of success so that it will whet their appetites for good gardening books. A gentleman of much general intelligence, who is on the staff of one of the largest New York City dailies, became last Spring an enthusiastic gardener. One day he

View of a Bold and Handsome Rock Garden
This feature of gardening continues to excite lively interest

was looking at the Pea vines, just coming into bloom in his neighbor's adjacent garden plot, and solemnly asked whether the vines had to have these flowers on them before they would bear Peas. There is plenty of use yet for a little instruction in catalogs about gardening, and also for garden books.

The different kinds of seeds or plants should *always* be arranged in alphabetical order, and if the varieties of a particular kind of vegetable, e. g., Sweet Corn or Peas, are classed as early, mid-season, and late, the several varieties in each class should be alphabetically arranged. Many catalogs violate this rule without any apparent good reason.

This leads us to suggest that seedsmen and nurserymen, to some extent at least, should analyze their own catalogs, and give the results of these analysis in concise form. For example, in the flower seed part of a seedsman's catalog there would appear as a result of such an analysis, a list of all the annuals which he offers, which are suitable to grow for cut flowers especially; another list would contain those suitable for the body work of beds, and borders, a third list would indicate those useful for edgings, a fourth list those well adapted to growing in window boxes and vases, a fifth, those which will grow well in hanging baskets. A list may also be made of annual vines suitable for covering screens, etc., another for those which will cover walls, fences, stone heaps, unsightly places, etc.

Nurserymen may make analysis of their catalogs, and give the results of these in lists showing what trees, shrubs and hardy herbaceuos plants are suitable for different uses and locations. This analyzing of one's own catalog, and the making of lists which will be helpful not only to your patrons, but also to your *own store* and *traveling salesmen,* is a work of which very little as yet is seen in catalogs.

The page numbers of catalogs appear in several positions, and in figures of varying size. You look in a catalog index to see on what page a certain seed or plant is mentioned; you find the number and look for the page. We read books from the top of the page down, and we, therefore, naturally expect to find the page number there, either on the outer corner or in the center of the page in boldfaced figures of good size, and not on the outer corner or center of the bottom of the page, because we do not read from the bottom of the page upward.

There are not a few other criticisms and suggestions which might be made, but we will close with a few words about indexes and illustrations. Shall we place the index in the back or front of the catalog? Logically, it should be in the front of the catalog, but this part of it is customarily used to such degree these days for featuring novelties and for other purposes, which prevent the index occupying the first pages of the book directly after the introduction, where it should be, if in the front at all, that we are inclined to think it is better to place it in the back of the catalog next to the cover. Those who prepare annual catalogs seem to be struck with a thundersquall of economy when they come to making up the index, and use small letters and figures, and crowd it into a small space. An index should always be in boldfaced letters, and figures of good size, and well spaced, for it should be remembered that the majority of the people who use seed and nursery catalogs most are no longer young. There lies before me one of the most beautifully illustrated plant catalogs (featuring the varieties of only one kind of plant) ever published in this country. It has no index. The reason which would probably be given is that the names of the varieties are arranged alphabetically under each of their several divisions, and, therefore, no index is necessary. It is necessary, nevertheless, for the different varieties of this plant are arranged in this catalog under nearly forty divisions, and although each division is arranged alphabetically, it is quite difficult to find what you would like to find in this catalog, whereas an index would have obviated this difficulty. We believe that every catalog, even if it has a general alphabetical arrangement, should have a full index.

Some catalogs have two indexes, one containing the common, and the other the botanical names. This is a good plan, but we should prefer to have one index including both, e. g., we would place under A, Antirrhinum (Snapdragon), and under S, Snapdragon (Antirrhinum), under D, Dolichos (Hyacinth Bean), and under H, Hyacinth Bean (Dolichos). Such an index would be educative, for it is a well-known fact that we memorize through association, and if the botanical and common names of plants appear side by side in an index, those who use such an index will soon learn both names through the law of association, without any apparent effort.

Present day catalogs are as a rule profusely and effectively illustrated. In a few, however, we see illustrations which instead of being sharply defined, and showing considerable of detail, have an indistinct and blurred appearance. Such illustrations only count as one picture more, and detract rather than add to the appearance of the catalog. Furthermore, well made halftones are always preferable to poorly executed pictures in colors, though the latter, when well executed, do much to make catalogs attractive.

Some of our readers will say that they have already incorporated some of the suggestions of this article in their catalogs. If so, of course, such suggestions are useless to them, but nevertheless may help others. Of the criticisms also they may say that they do not apply to them. If not, they may, none the less, stimulate others to greater care and thought in catalog making. Furthermore, some may say of our mild criticisms that they are uncalled for, and of our modest suggestions that they are good in theory, but impracticable. You can divide men into two classes; the first class always says of any criticism "Unnecessary," and of any innovation "Impracticable"; the second class goes to work and performs the very task which the first class said could not be accomplished. To this second class belong the men who inaugurate improvements in all departments of life, catalog making not being excepted, and who keep the world moving.

Selections of bedding plants, hardy flowers, street trees, ornamental shrubs, hedge plants, annuals, sweet-scented plants, and indoor flowering and foliage plants are given under Miscellaneous Information at the end of this book.

Growers, keep your grounds neat; it is a fine advertisement

Adjusting Selling Prices

By Samuel Batson

IT is impossible to fix costs to fit every man's case as this is where business capability and foresight wins out over haphazard methods, even when connected with hard work and long hours. Notwithstanding this there are general estimates which have been made, compiled and published from time to time (as in the case of Carnations a few years ago by THE FLORISTS' EXCHANGE) and these will form a fairly good guide for those unable to check up for themselves.

Some 10 or 12 years ago a company forming here to operate a large growing establishment wrote a number of letters to various prominent growers, of Carnations especially, asking information on costs and returns and I was enabled to read many of the replies which came from all sections of the country.

These, like those in answer to the inquiry of THE EXCHANGE showed an approximate expense that was kept very close to by all, and the variation of returns mostly accounted for by the character of the business done. These averages of costs showed that at that period about 30c. per sq. ft. of bench was about the rule for stock like Carnations, etc., requiring the Carnation house temperature and something like 45c. to 60c. per sq. ft. gross returns. The first items were not understood to carry such costs as advertising, shipping, etc.; merely the general overhead and labor and fuel costs.

Being at that time interested as a grower of Carnations, I followed these estimates closely and found by my own figures that my costs were much about the same, although not successfully reaching the top figures in receipts.

A good market in those days was more interesting to most growers than figuring costs, as labor was easy to get and keep, while supplies of all kinds were reasonable; and indeed these conditions were fairly well maintained till within the last three years; and what increased costs arose were largely discounted by the extra good days like St. Valentines', Mother's Day, etc., so that we got along fairly well, although at no time during my experience has there been anything very large in the way of profits in the growing end of the business. There may have been some who made fortunes, but most got comfortably placed through the rise of real estate values rather than out of profits from growing.

However, two years ago, things took a turn upward so fast and so generally that most of us had to sit up and take notice, though many thought this increase only temporary, and as business was generally good, little notice was evinced and not much effort made to establish higher prices. The present year has seen a change. A return to old-time conditions are now regarded as impossible, so that the far-sighted grower and retailer see that it is necessary to adjust the price list to the expense account but are not achieving much success on account of lack of co-operation among members of the trade.

In following my investigations regarding expenses I have been accorded the assistance of one of the largest and best equipped concerns in the Middle West, which also keeps a very close account of out-go and income, and this firm's actual experience is that labor costs have increased 40 per cent. and fuel 75 per cent. the last year or so. To their

credit be it said they have led the way in the attempt to adjust prices in their town and with a stronger support from their brother tradesmen might achieve successful results.

My own fuel costs have risen from 8c. in 1915-1916 to an estimated one of 13c. for the present season. Labor costs with me are nominal, but general labor is being advertised for here at 35c. per hour, an advance of 10c. or 12c. during the last two years, which affords ample support to the estimates of the concern alluded to.

Taking the 100ft. x 20ft. house as a basis for figuring we find that such a house will have at most 1400ft. of bench, on which can be planted 1800 Carnations, the whole representing an outlay of not less than $2000, which at—

6 per cent. carries an interest charge of	$120.00
Add to this depreciation and repairs, etc	150.00
Labor at present rates	250.00
Fuel at 13c. per sq. ft	182.00
Total	$702.00

This makes a total of 50c. per sq. ft. for operating costs and upkeep.

Some localities may reduce these figures somewhat, but more will increase them and I am sure 50c. may be fairly assumed as the actual cost of production in the case of Carnations and kindred crops. Being an all-season crop as well as a staple the results from such a house will give us some idea as to returns; so again taking the average results from The Florists' Exchange census we find 15 flowers from each plant about as good as the grower may expect which gives us some 27,000 blooms, and by the way this is a 100 per cent. crop which we seldom get even though we work faithfully to get it.

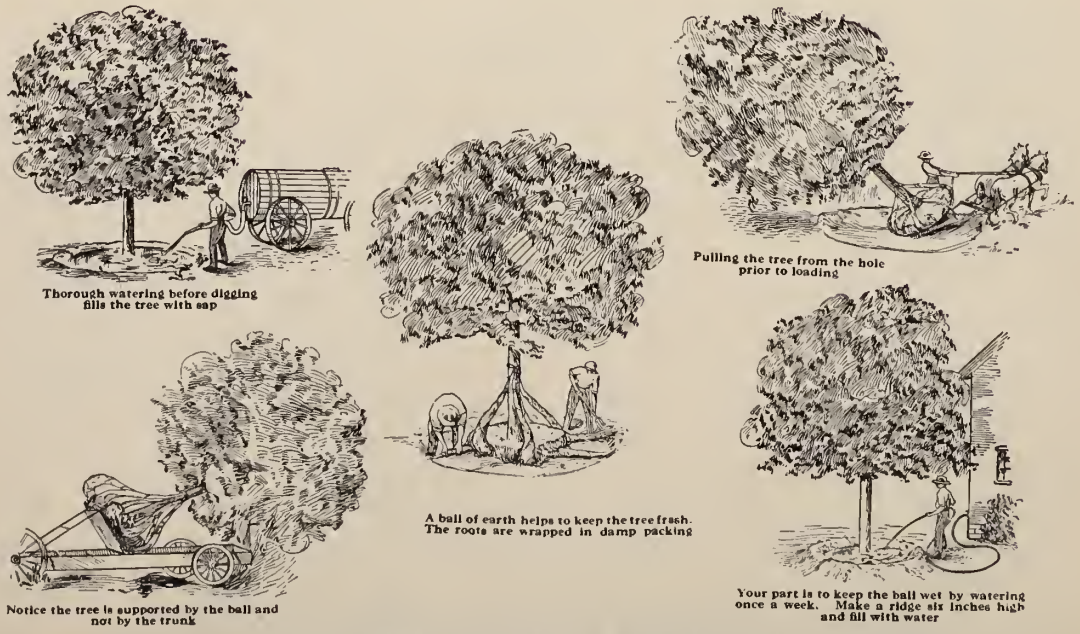
The costs of packing and shipping, losses in transportation or through bad debts were not included in the costs of production, so these must also be deducted from the gross returns.

I have, however, shown that a $3 per 100 average must be made in order for a Carnation grower to maintain his equipment and expenses and, insofar as I can see there should be no difficulty in getting such a price, although if I should hazard a guess I should place the average of the last few years at about $1.75, which is clearly a losing-money proposition. If there is any time when the opportunity to gain the desired increase in prices may be at hand, the coming Winter will without doubt afford it.

The Seasons

(*Washington Mean Time*)

Vernal Equinox, Spring begins March 21, 5.26 a.m.
Summer Solstice, Summer begins June 22, 1.00 a.m.
Autumnal Equinox, Autumn begins Sept. 23, 3.46 p.m.
Winter Solstice, Winter begins Dec. 22, 10.42 a.m.



Illustrations of the processes of transplanting large shade trees in Midsummer

From the Catalog of Isaac Hicks & Son, Westbury, L. I.

Section VI
Florists' and Nurserymen's Calendar

The Year's Work in Commercial Greenhouses

January

First Week.—English Daisies, Forgetmenots and Pansies for Spring may still be sown. Hydrangeas for Easter may be started in a house at 50 deg. Gardenias should be in a house with a temperature of 60 deg. at night. The Lorraine and Cincinnati type of Begonia can be propagated by cuttings now, also bedding Begonias of the luminosa type and Lobelias and Petunias.

Second Week.—Cuttings may be taken of Fuchsias, Callas, Heliotrope, Stevias, each from the young wood. Canterbury Bells do well in a temperature of 45 deg. Plants for Easter and later may be brought in from the frames. Primula obconica and malacoides should not be allowed to go to seed, a house from 50 to 55 deg. at night is suitable. Start Rambler Roses for Easter flowering. Look over your stock of Cannas.

Third Week.—Sow seeds of Vinca rosea, Pentstemons for bedding, Verbenas, Aquilegias, Snapdragons, Shasta Daisies. Prepare hotbeds for bedding stock and for raising young vegetables. Look over your stock of flats for growing on seedlings. Bring in Wallflowers that were potted last Fall from frames to a Carnation house temperature. Hardy Phlox may be propagated from cuttings, the clumps being brought in and planted in a sunny bench in a Carnation house; from these cuttings may be got in four weeks.

Fourth Week.—Top dress Callas in pots, or supply with liquid manure. Start Spiræas now for Easter in 50 deg. Asparagus Sprengeri is a great feeder, top dress with well rotted cow manure and soil. Make due preparation for getting Geranium cuttings from now until the end of March. Giganteum Lilies will now be 6in. in height. Keep the plants free from green fly, and give them a temperature of 60 deg. Plant out on the bench a supply of Boston Ferns from 2in. pots; these will be nice bushy plants by the middle of May.

February

First Week.—Are you working on a system in bringing in flats of Dutch bulbs? If not, think it over and make better plans for another year. Some growers find the ground so frozen when they wish to get their flats that this is an impossibility. Sow seed now of Candytuft, Stocks and Calendulas for Memorial Day. Two and one-half inch stock of Easter Greeting and other similar Pelargoniums, shifted into 3½in., can be grown into bushy specimens by Spring, flooded with buds and

flowers; they like a cool moist house. Keep Carnations at a night temperature of 50 deg., and maintain an even temperature. Continue rooting Carnation cuttings.

Second Week.—Sow seeds of the African Daisy, Dimorphotheca aurantiaca in rows across the bench in a house of about 48 deg., thin the plants later and they will flower in April. Eupatorium Fraseri can be used like Stevia, and E. cœlestinum may also be sown now, transplanted later into flats and planted outdoors about the middle of May. Larkspur sown now will flower at the end of May. Seeds of 20th Century Dahlias can be sown. Dahlia roots may be bedded in the bench; the cuttings may be potted three in 5in. pots, and place the pots below the bench, afterwards when growth is 6in. tall, put the pots on a light bench in a house of 52 deg. The first batch of Asters may be sown indoors for June flowering.

Third Week.—Canterbury Bells may be sown, transplanted later into flats and placed out in the field in May. Get clumps of Cannas from under the benches and cut them up ready to be started in pots or flats later on. Sow the first batch of Cobæa scandens. Purchase strong 2½in. or 3in. stock of double Petunias and propagate the cuttings of these. Stock plants of Salvia should be in a house of 55 to 58 deg., so as to give cuttings. Seeds of Salvias may be sown at once in 50 deg. Seed of Pennisetum should be sown now and after being potted into 2½in. should be grown cool, never crowd the plants. Caladium esculentum may be started in general heat. Stock plants of Chrysanthemums can be started in a house of 48 deg. Sow seeds of Tomatoes to have strong plants by May 20.

Fourth Week.—Shrubs for Easter should be in a temperature of 50 deg. Easter falls on March 31. Start the main batch of Tuberous-rooted Begonias in flats 3in. deep in a temperature of about 55 deg. Sow seeds of hardy perennials, such as Delphiniums, Gaillardias, Shasta Daisies and Polyanthus at once to get fair size plants by Fall. Bring into Violet house some Shasta Daisy clumps and Coreopsis, grow them cool. Spiræas should be fairly well advanced and in a house of 55 deg. Select a few strong Stevias and place them on a bench or pot up into 8in. or 10in. pots after they have been cut down; abundance of cuttings can be had from a few plants. Make sure of a supply of paper pots for seedlings.

March

First Week.—Root cuttings of English Ivy. Attend to staking Snapdragons in the benches. Remove side growths from the flower stems and such growths can be struck as cuttings. Sow Sweet Peas in 3½in. or 4in. pots for outdoor planting at the end of April. Sow seeds of Asparagus plumosus and Sprengeri; Asparagus baskets sell well in June. Bulb stock should be grown cool after buds begin to show color.

Second Week.—Pansies may be brought in from coldframes to a Carnation house temperature, and will flower for Easter, also Forget-me-nots. Keep Rambler Roses growing in a house at 60 deg., and watch ventilation carefully so as to avoid mildew. Easter Lilies should show the buds a few inches long, while some backward plants may be given a temperature of 90 deg. Give plenty of water and feed occasion-

ally. Bulb stock such as Daffodil bulbs, and Hyacinths require 20 to 25 days from the time they are brought indoors to the time the flowers open at this season; double Tulips require a little longer. Make sure of a few deep cold-frames with about 30in. head room; here you can place flats of Narcissus and Tulips before Easter to harden them and be out of the way Select nice bushy Geraniums in bud for Easter week. Attractive pans can be made up of such plants and some with small Marguerites. Preparations may be made for filling a few Easter baskets and fern dishes; Chatelaine Begonias come in well.

Typical plant of the new rose colored Townsend Primrose (Primula malacoides Townsendii.) The flowers are large

Third Week.—Azaleas for Easter should be showing color with well developed buds. Sow some Salvias; pot on earlier sown plants. A hotbed should be made now; here can be grown small Pansies, Daisies, Forgetmenot, Phlox, hardy Poppy, Shasta Daisy and Schizanthus. Have straw mats or shutters at hand to cover up the sashes in case of sharp frost. Start fancy leaved Caladiums in gentle bottom heat, sandy soil. Canterbury Bells may be sown. Hardy Campanulas like persicifolia and carpatica may also be sown. Climbers may be potted up and grown on for Spring and Summer; these include Trumpet Vine, Rambler Roses, Ampelopsis Veitchii, Honeysuckle and Clematis. Look over all bedding stock, keep in healthy growth. Give the plants all the sun possible.

Fourth Week.—Hardy Poppies from the January sowing may now be transplanted into flats. For Spring sales pick out the largest seedlings. Where damping off of seedlings or cuttings is prevalent, try to cover the soil or pots with coarse sand. Sow Mignonette in flats, and when just large enough to handle transplant them, placing three in a 4in. pot, later pinch back when 3in. high; always try and prevent the roots from being broken. Glechomas potted into 3½in. pots make bushy specimens for May for hanging baskets and window boxes. Sow a batch of Strawflowers or Everlastings indoors, and grow them on in 2½in. pots for May planting. You can also sow Feverfew roots into the hotbeds and treat as you would Asters, Marigolds and Scabiosa. Among the Everlastings are Acroclinium, Helichrysum, Rhodanthe, Xeranthemum, Statice, which is perennial. Thunbergia, or Black-Eyed Susan is a desirable climber for Spring sales; seeds may be sown now and later potted on.

Fifth Week.—Pot on Ivy-leaved Geraniums. Sow seed of Ricinus or Castor Oil Bean. Uncover perennials in the open air in frames, also have stock that is in frames covered up. Alternantheras wintered over in flats may now be divided and potted up or planted out into other flats and placed in a hotbed. The double yellow Alyssum may be propagated from cuttings. Pot or box up tuberous-rooted Begonias.

Box of forced La Reine Tulips, one of the best either for the commercial or private place. The color is white, shaded rose. A box 4½-inches deep, filled with good fibrous soil, will suit. Grow on in a Carnation-house temperature and the flowers will have much better lasting power

Soft wood cuttings can also be taken. Old plants of luminosa, Erfordi, or Chatelaine Begonias can be divided into pieces and potted. Propagate Violets from runners. Look over the Boxwood, Laurel or Bay trees in a cool house; they will start into growth; they may require repotting or retubbing, or at any rate top dressing. Shift any pot bound Dracæna indivisa into larger pots. If potting is not required

Abutilon vexillarium grown as bush form for sale at Easter. The foliage is yellow variegated and the flowers are yellow

some feeding with cow manure may be advisable, or it may be well to buy in some nice 3½in. stock in May. Cuttings may be taken of the Mrs. Sander Marguerite; provide good drainage and afterwards do not use too rich a soil. Seed of Centaurea gymnocarpa may be sown; afford a Carnation house temperature. Continue rooting Chrysanthemums. Sow seeds of Heliotrope, or take cuttings and pot on.

April

First Week.—Baskets for porches may be filled now. Weeping Latanas make suitable plants for these. All left over Easter stock should go to the cool house; these include Azaleas, Hydrangeas, Spiræas, Lilac, Deutzias, Cherries, and flowering Plums. Pot up hybrid tea Roses for late sales. Many vegetable plants can be raised now for sale. Lilium speciosum, rubrum and other varieties placed in a pot or bench planted now, will produce flowers before those from out of doors. During the Spring and Summer keep planting cold storage bulbs for a succession of bloom. Shift all bedding stock as may be necessary. No seedlings should be allowed to get spindling.

Second Week.—Pot up fancy-leaved Caladiums as soon as the tubers are started. All pot bulb stock should be in the coolest place possible. Now is a good time to sow fern spores. Sow them on top of sand or fine soil in a pan in a warm moist house that is shady. Keep up a stock of Vincas, Thunbergia alata, English Ivy and other trailing or climbing plants. Calendulas, Marigolds, Zinnias, can be sown for cut flowers for the Summer, also double Cornflower, Salpiglossis, Cosmos, Dianthus, Larkspur and Stocks. There are other useful annuals that can be sown now for this purpose.

Third Week.—Pot up Cannas that have started. Pennisetum may also be potted up singly; do not crowd this plant. Grow on China Asters without a check; do not get them stunted. Sow Primula obconica for early use. Keep an agreeable temperature in the bedding stock houses; a cold clammy atmosphere is detrimental. Increase your stock of Peonies, Iris and Phlox, or purchase small plants and grow on in fairly rich soil. Many hardy flowers can be potted up for Summer sales, including Shasta Daisy, Larkspur, Gaillardia, Columbine, Pyrethrum, as well, of course, as Chrysanthemums. The tops pinched from Geraniums may be made use of as cuttings; these will furnish small plants for stock for the Fall. Lawns may be made now.

Fourth Week.—Poinsettias, if placed in warm heat, will soon send out cuttings; these should be rooted and grown on. Take cuttings of

Petunias for a late batch. Pot on Lobelias for large plants for vases; the trailing sort, Lobelia speciosa is splendid. Begin planting Gladiolus out of doors, and at intervals for a succession. Young Bouvardias in 2in. and 2½in. pots can be put out in frames and grown on there during the Summer. Young stock of French Hydrangeas from 2in. and 2½in. pots may be planted out now, and will make nice specimens for the Fall. Cut sown plants of Coleus may be shaken out and repotted. Keep Cyclamen growing on in a cool, partly shaded frame.

May

First Week.—Those Geraniums and Lemon Verbenas in 2in. pots may be potted into 4in., and will sell by the end of the month. Now is the time to get hanging baskets and window boxes looked out and filled. Carnations can now or shortly be planted out in the field. Order rooted Chrysanthemum cuttings; they may be potted or benched.

Second Week.—Buy in some 4in. Boston ferns and grow them on. Plant out in the field for Summer cut flowers, young stock of Hydrangea arborescens grandiflora, also have a stock of H. paniculata grandiflora, which begins to bloom in the middle of July when arborescens has ceased. Seeds of Giant Branching Asters sown out-of-doors May 10 give good flowers for late Summer. Pay attention to the growing on of Primula, Cyclamen, Winter-flowering Begonias, also Bouvardias, extra early Snapdragons for December flowering, home-grown Freesias, and late flowering Chrysanthemums. See that all bedding stock has room in which to develop; it pays to pot on stock from 2in. or 2½in. pots into 4in. size rather than have it stunted.

Third Week.—Prepare a nice piece of land, and sow out a few

Concrete Manure Pit

On many a grower's or nurseryman's establishment a manure pit would pay for itself in one or two years. Leaching is prevented and fermentation much reduced.

rows of annual Lupines, Calliopsis, Zinnias, Larkspur, Schizanthus, Calendula, Salpiglossis, Nasturtiums, Marguerites, Cosmos, Centaurea, Dianthus and Hunnemannia. The double Stevia may be planted out or plunged out for the Summer and lifted about the middle of September. Cobæa scandens may still be sown, and will give nice plants within a month. Plant a good-sized patch of early outdoor flowering Chrysanthemums, of such varieties as Cranfordia, Normandie, L'Aisne and others. Make your purchases of Lilium speciosum, rubrum, album, pot into 5in. pots, plunge in a coldframe under 2in. of soil. Continue potting later batches for succession in Summer, Fall and Winter. Lilium giganteum from cold storage may also be potted up now.

Paris Daisy or Marguerite badly attacked by the leaf miner

Spray with a nicotine solution. See Bull. 157, Nov. 1914, Agri. Ex. Stat., Amherst, Mass.

Leaf of Marguerite Showing tunnelling of the leaf miner

Fourth Week.—As soon as bedding is well through, look over your stock and make an inventory, also a list of your wants and stock needed and get them. Young Roses in 2in. and 2½in. pots, if planted out now, will make nice specimens by next November, when they can be lifted and potted up or heeled into a coldframe. Plant Dahlia tubers, also Gladioli. Plant out young Chrysanthemums.

June

First Week.—There is still time to start fancy-leaved Caladiums. Pot up three in a 6in. bulb pan. Set aside a few of the best Rosy Morn Petunias for stock for cuttings. Stock up now on palms for next Winter's supply. Boston Ferns can be benched after the bedding stock work; these will sell by next October. Sow some Centaureas for Summer cut flowers; the species americana, suaveolens, and imperialis are each good. Get busy with the benching of early Chrysanthemums. Set aside some Chatelaine

Begonias and grow on for later use. If you are anxious to increase your stock, plant in an old hotbed and keep the plants pinched back; by the end of July you can separate them and have nice specimens in September for 4in. to 5in. pots. Make a sowing of Gypsophila, also some Schizanthus. Look over Delphiniums in the field and stake the growths; good cultivation suits them.

Second Week.—Carnations in the field must be kept cultivated. Make up a few pans of tuberous-rooted Begonias for veranda decoration or the greenhouse. Put in a bench or two of late branching Asters. Make sowings of Immortelles (Strawflowers). Plant out young Vincas, but stake the plants, otherwise the runners will root. Make preparations for Carnation soil for the benches. If you are short of Geranium stock bench a few hundred plants to give cuttings. A bench devoted to Smilax is a paying crop. Lift bulbs of Darwin Tulips after the tops have ripened; lay them in flats, cover with light sand, and place under cover for four weeks, then clean off the bulbs put into other boxes and store away until October.

Third Week.—Bouvardias can be planted in the benches or placed out-of-doors for a few weeks, and lifted about Sept. 1. Freesias can be dried off, and cleaned in the same way as the Tulips. Plant them at the end of July into 6in. or 7in. bulb pans, placing these in a coldframe and covering lightly with short hay or straw; they will give good stock for Christmas. Sow seed of English or Garden Primroses; these will give nice flowering stock for next Spring. Easter flowering Polyanthuses can also be sown in a coldframe and kept shaded. Sow seed of Foxgloves the first week in July. Take care of Boxwoods or other evergreens that have been recently planted, keep them watered. Plant Asparagus Sprengeri in benches. Roses in pots should have the sunniest position for the next three months. Plunge the pots up to their rims, or bury them altogether and water freely. Late Gladioli may be planted; June 25 is not too late to get good results; set 5in. deep. Stock up with small plants of Primula obconica and grandiflora.

Fourth Week.—Take stock of all your needs for the coming season. Give careful attention to pot Chrysanthemums as to watering and nourishment. Keep on pinching tops if you want bushy plants. For best results greenhouse culture is recommended. In order to obtain the best results from single stem Chrysanthemums, the plants should be grown without interruption; keep them clean and the soil stirred. See to the shading of the houses and sash frames.

July

First Week.—Sow the seeds of Chinese Primulas for flowering at Christmas. Plant out small stock or rooted cuttings of Marguerite Mrs. Sander; lift these again in September. Sow out some Cineraria stellata for cut flower in the early Spring. Pyrethrum roseum from seed sown now will give blooming plants next June. Sow Sweet Williams now for stock for Fall, and also for Spring sales; Newport Pink is a notable variety. Pot on some Maidenhair ferns into 4in. pots, also a few well colored Coleus and grow these as specimens for store decoration or your own conservatory. Daisies, or single Marguerites from 2in. pots can be planted out and lifted later. Encourage

growth in your Cattleyas by frequent spraying, and water thoroughly every other day; very moderate shade is advised. Cypripediums however, require considerable shade, and grow them as cool as possible.

Second Week.—Keep the cultivator going between the rows of Peonies even after flowering. Irises may be cut back to within 4in. of the ground; this will produce young shoots at the base of the plants, and by the end of August you can lift and divide the clumps; most of the divisions will flower next Spring. Sow Pansy seed of the finest strain in a coldframe. When the seedlings are up let them have full sun; transplant later. Myosotis can be treated in the same way. Put

Decorative Otaheite Oranges Grown in 6 in. Pots; Splendidly Decorative and lasting a long time in fine condition

into sand some double Sweet Alyssum. They can be planted along the edge of a Carnation bench, and will flower all Winter. Pot up a few hundred Lilium giganteum, album, rubrum and auratum from cold storage; by October the giganteums will start to flower. After potting place in a coldframe where they can be shaded until the plants are rooted. Make preparations for housing the Carnations from the field. The time to root Poinsettias is from now on until the end of August. Purchase 2in. or 2½in. stock of Begonia Cincinnati, and grow on.

Third Week.—Plant out any surplus stock of pompon Chrysanthemums; pinch them several times between now and the end of September. Snapdragons for Winter blooming should be benched now; allow plenty of space; grow cool, and in a rather moist atmosphere. Pot up Freesias.

Sweet Peas and Calendulas to follow Chrysanthemums next November should be sown now or within the next two weeks.

Fourth Week.—This is a good time to sow seed of Baby Primrose, P. malacoides. Large plants can be divided and potted into 2½in. pots. The coolest spot is the best for Cineraria and Calceolaria seedlings, with plenty of moisture and little shade. Now is a good time to stock up with palms in variety, also Pandanus, Ficus, and Dracænas. Sow seeds of the hardy Gaillardia and Coreopsis in drills and transplant seedlings later on. Keep the Chrysanthemums in benches well watered and sprayed. Young Violets out of 2½in. pots planted now on a bench will make flowering plants for next Winter; Princess of Wales is one of the best.

August

First Week.—Make a sowing of annual Gypsophila; this will give you flowers for September and October. Keep sowing batches every two or three weeks; they can be grown in flats. Have your seeds of Spencer Sweet Peas of the best kinds ready for sowing the middle of August, five in a 4in. pot. Take Geranium cuttings. Bench Smilax out of 2½in. pots. Sow Smilax seeds in the open, also Delphiniums and some Pansies. Keep Stevia pinched back; they will be tall enough by November when wanted. Control white fly on any crop that is attacked by spraying with a solution of Black Leaf 40, or fumigate with hydrocyanic acid gas. Take buds of Chrysanthemum Oconto. Grow on Lilium formosum in a temperature of 60 deg.

Grape-vine in a Tub
Well-fruited canes make ornamental subjects for use on large dining tables

Second Week. — Carnations should now be benched and becoming established. Do not plant deeply. Apply all the shade possible; in a few days remove shades and give all the ventilation possible. Water well; thereafter be very careful with the watering, and on no account overwater. Stem rot is the worst trouble just after plants are benched. See to repairs to boilers, piping, woodwork, and glazing. See that Chrysanthemums are properly supported. Water and spray Poinsettias regularly. Shade Chrysanthemums on hot sunny days. Spray them in the late afternoon when the sun has gone off.

Third Week.—Another sowing of Calendulas for later flowering can be made in a coldframe. These will give you flowers for Thanksgiving. Plant up a stock of Shasta Daisies. Bench Bouvardias after pinching back the plants; lift each with a nice clump of soil. Spray freely; shade slightly, and in a month pinch again. Sow seeds of Mignonette into 2½in. pots, plant out in the benches during September. Plant out Asparagus Sprengeri. Continue taking cuttings of Ivy and zonal Geraniums, and show Pelargoniums. Sow Winter-flowering Stocks in bulb pans or flats and transplant later into 2½in. pots. Plant out by October or else pot on into larger pots. Pot up Godfrey Callas three in a 6in. pot; about January shift into 8in.

Chorizema cordata splendens Trained in basket form. A Winter and Spring blooming plant. Take Cuttings late in Spring and grow the Plants in frames or cool Greenhouse

Fourth Week.—All small ferns for Winter use can be purchased now and grown on, likewise Crested Holly Fern, Cyrtomium Rockfordianum, and Bird's-nest fern. Grow on flowering stock of Geraniums for December sales. Geraniums can be rooted still in coldframes. Transplant Delphinium seedlings to their Winter quarters in a cool greenhouse. These will flower early next Spring. Keep up cultivation between the crops out of doors, such as Phlox, and other perennials.

September

First Week.—Now is the time to map out the Winter campaign. What crops are to occupy the benches, what to follow the 'Mums, amount of Lilies to be grown, as well as the Spring stock to be propagated. Make every foot of space pay. Keep no derelict stock around. Give care to the Carnations in the benches. See that the soil does not dry out too much, nor keep it soaking wet. All diseased leaves should be picked off. Stir the surface of the soil. Nothing is gained by letting the plants flower before they are ready to do so. Go over the plants several times a week. Whenever you find a short stem setting bud remove it and give the growth below a chance to do better. Get the coldframes ready. Very soon the Roses, Hydrangeas, Azaleas and other hard-wooded plants as well as perennials and biennials that require overwintering will be put in these frames. Some of the double Sweet Alyssum can be cut back; they will soon break again. Look out for the common green caterpillar which is so fond of these and the little Mignonette plants. Now is the time to transplant or make a new plantation of Peonies. A few Sweet Peas can be grown along the

Low Span Greenhouse Used as a propagating pit. Note the glazed cases

purlin supports in the Carnation benches. Pot up French Roman Hyacinths. Get in some Lilium giganteum from cold storage.

Second Week.—Pinching of Chrysanthemums is in order. A good mulch over the roots is excellent. Staking, disbudding, or removing the shoots requires attention. A stock of Cyclamen can be purchased now and grown on to the flowering period; they are easy to handle now after the hot weather. Lift Hydrangeas from the field and pot them, also Christmas Pepper (Solanums). Make up a few pans by putting in from three to five of the medium sized plants into a 8in. or 10in. size pan. Pot up early Paperwhites, also some Freesias. Young stock of Coleus for overwintering should be seen to. Plants from cuttings rooted last month are better than hard wooded ones for carrying over. Seedlings of Asparagus plumosus nanus potted up now will make excellent stock for fern dishes at Christmas and later. Every endeavor should be made to obtain a sufficient supply of coal.

Third Week.—As soon as French Golden Spur Narcissus are obtainable they can be planted in flats and put in a coldframe under a few inches of soil, kept moist, and they will be ready to be brought indoors the middle of November. Select cuttings of the bottom shoots of the choicest Pentstemons and root these indoors now and the next three weeks; overwinter in a cool house like Geraniums. Seed of Pentstemons can be sown toward the end of next month. Field stock of Violets must be raised now. Pansies and Mignonette do well in the Violet house. The Pansies can be planted later, space being left. Variegated Vinca in the field can be cut back to make sturdier plants. English Ivy in the field should be prevented from forming roots along the branches. Take care of seedlings of hardy perennials and transplant. Plant Darwin Tulips in flats as soon as procurable, also early single Tulips like La Lorraine. Pot up or plant in flats Grand Soleil d'Or Narcissus. Sow Nemesias and later pot up the young stock in 2½in. pots; pinch; give plenty of water; plant on a sunny bench; they will flower in Spring. Take note of the finest kinds of Cannas, both for show in the garden and as cut flowers. Pot up Dracæna indivisa from the field, shade for a few days. September is the best time to lift almost any plants you have in the field to pot up and overwinter indoors. Stake the Bouvardias, keep clear of white fly by spraying. Schizanthus can be sown now for Winter flowering. Chorizemas and Ericas should be kept in a cool greenhouse. If they are wanted in bloom by Christmas they can be moved into a warmer house.

Fourth Week.—One of the finest hardy plants at this time is Artemisia lactiflora. A stock of this should be secured. The varieties

Pan of Dwarf Poinsettias From Late Struck Cuttings.

of Anemone japonica are now invaluable, and they are lifted after flowering and propagated from rooted cuttings the same as Bouvardias or hardy Phlox, etc. They will overwinter in a coldframe. Keep the plants in the greenhouses clean everywhere. Prevent insect and fungous attacks; this can be done by careful watering, ventilating and firing. Plant Formosum Lilies for Easter flowering; let them remain in the frame outdoors with shade frames over them for a few inches of soil; avoid too rich soil, and do not forget good drainage. Another batch of Sweet Peas may be sown either in pots or directly into solid beds. Seeds of annual Lupines may be sown for flowering plants next March or April. Carry the Lily plants along in a cool house; plant out after the 'Mums are through. Benching of the larger Pansies may be done. Make every preparation to guard against sudden sharp frosts, both indoors and out. Late flowering Cosmos can be transplanted from the open to a position under glass now or later.

Fifth Week.—Maintain an even night temperature around 50 deg. in the Carnation house. Attend to disbudding and supporting the plants, as well as keeping them clean and the soil stirred. Single stemmed Chrysanthemums for large flowers must have all side shoots and buds scrupulously removed. Support the stems and keep the plants well fed. The present is a good time to purchase Deutzia gracilis. Store them away in a coldframe until February. Take all the cuttings of Geraniums you can now and place them in the sand where they can

remain for some weeks. Get all stock plants of Rose Geraniums, Heliotropes, Ageratum, Fuchsias, Salvia, Coleus, Abutilons and other material indoors. Purchases of Hydrangeas can also be made. Stock not requiring a warm house can be placed in a frame so long as the frame is protected during cold nights. Pot up sufficient stock plants; from these, cuttings will be got in the early Spring. Now is a good time to bench the general stock of Snapdragons. As soon as the Dutch bulbs arrive pot these or plant out of doors.

Palms Under Lath-House

Recently the South, particularly Texas, has had dreams of being able to grow much more of the plant and flower stock it uses, than formerly. The time may come when Texas will grow all it needs. Why could not Kentias, as shown here, be grown abundantly in the Sunny South?

October

First Week.—Young stock of Primula malacoides can be purchased. Shift into 3½in. pots and grow on; they give excellent cut flowers. Primula obconica may be planted out on a bench in a cool house. Next February, March or April these can be lifted and potted up. Poinsettias must have a temperature of at least 55 deg. at night and during the damp chilly weather. Poinsettias love heat. Support your Stevia plants. Surplus Carnations from the field may be potted into 4in. size and plunged in a coldframe to be overwintered there. Shift into 5in. pots next March or April for sale for bedding plants. Like Stevia, Mignonette must now be supported. Sow seed of Mignonette for January and February flowering; use flats or small pots. Inspect the leaves of Calceolarias and keep them sprayed or fumigated against insect pests. Protect the beds of Chrysanthemum maximum. Clumps of the variety King Edward VII can be lifted, carried along in a frame, brought into a temperature of 48 deg. in January, benched, and they will flower at the beginning of April. Coreopsis can be treated in the same manner.

Second Week.—Window boxes for Winter can be prepared now. Order dwarf Pine, Birch, Cedar, Boxes, Arborvitæ, Juniperus or Spruce from your nearest nurseryman. Keep the soil in boxes well watered. Dahlias and Cannas may be cut down and the roots stored as soon as frost strikes and cripples them. Supporting of all doubtfully tender outdoor flowers like Tritomas, Gladioli, etc., must be kept in mind. Mulch between the rows of Peonies. Clean up the beds of perennials and make provision for the protection of late planted stock, especially in Northern States. See that all are properly labeled or marked. Now is a good time to make preparations for some Fall advertising, either by circulars or otherwise. Plant up further batches of Holland bulbs. The flats or pans can be placed in a bulb cellar or in frames, or at any rate where there is no danger of water gathering and later on freezing. The flats themselves must have good drainage. When freezing weather starts apply a layer of straw and manure over the pots so that the pans or flats can always be got at even in the hardest weather. Seeds of Sweet Sultan in blue or pink shades can be sown at once.

Third and Fourth Week.—Take stock of your requirements of plants for Christmas and New Year. Ericas, Primulas, Ardisias, Peppers, etc., should be on hand soon. Care should be taken of the Vincas now heeled in a frame from the field. When the 'Mums are over bring in the Vincas, divide and pot up into 3½in. pots in a rich loam. Cyclamen do best in a temperature at 53 deg. or a little warmer. Seeds should he sown for stock for next year. Continue planting Paperwhites, Grand Soleil d'Or and Trumpet Major Narcissus. Bring in the early planted stock and let them have a sunny bench in the Carnation house. Field grown Roses can be lifted and potted now; pot firmly, place these in a deep frame, spray on warm days. Cover the frames during rainy periods and get well-ripened wood and re-established plants; these force well in the early Spring.

November

First Week.—Among the best early Tulips are Couronne d'Or, Murillo, Salvator Rosa, and Rubra Maxima; La Candeur is another good white double. Shift on Cinerarias and Calceolarias from 2½in. pots into 4in., or 4in. into 6in. Lay in a stock of Bougainvilleas in 5in. pots; they will do nicely in a Carnation house in the next few weeks. Keep on sowing Sweet Peas for succession.

Second Week.—Roman Hyacinths for Christmas should go to a house with a temperature of 50 deg. The first planted batch of Grand Soleil d'Or Narcissus may also be brought along slowly. A temperature of 55 deg. will suit the Cyclamen. Keep the Carnation house well ventilated with enough heat in the pipes to maintain an even temperature. Pot up formosum and giganteum Lilies, and place in a coldframe. Plant bulb stock outdoors for Spring flowering. Winter berries and Boxwood for Christmas can be purchased now and buried in a deep coldframe about 6in. They will keep perfectly fresh in this damp soil if well covered with leaves. A compost for the Winter and Spring should be prepared and got under cover.

Third Week.—Forty-five deg. is a safe temperature for Violets until the end of January; do not try to force them. Bulbs planted in

flats should always be kept moist in order to do well; be ready to have them well covered up in hard weather. Keep on planting more Freesias. The Christmas stock should now be ordered in hand. Do not allow Primula and Begonia to become pot bound; the same applies to Baby Primroses. Small flowering Gladioli of the Colvillei type force easily; get some for the coming Winter season. The earliest Carnation cuttings can be taken. Plant Calendulas on the benches to follow 'Mums. Azaleas for Christmas should be in a temperature of 60 to 65 deg., and syringed freely. Those for later can be in a cooler temperature.

Fourth Week.—Plant rubrum Lilies in 5in. and 6in. pots; water well. Put a good layer of soil over the pots after they have been placed in the frame. These carried over plants will do for planting out next Spring. Pot up formosum and giganteums for Easter flowering. Get the plants well rooted, and after that give them 60 deg. or more in order to push them along; this applies particularly to giganteums for cuttings by Christmas. Spruce trees potted into 4in. pots make excellent Christmas greens; larger trees can be put into 12in. pots.

December

First Week.—Look over the stock of dishes, pans, basket covers and accessories for the Christmas period: the ribbons, sheet moss, tin foil, stakes, wax and wrapping paper, boxes, all are required. See that the flower pots are clean. Azaleas for flowering at Christmas must now be showing color in the buds; a house of 55 deg. is advised. Cincinnati and Lorraine Begonias should be well advanced for Christmas flowering, and if the stock is a little behind a temperature of 60 deg. will force them sufficiently. Cyclamen should be in a temperature of 50 to 55 deg. Cut Boxwood can be kept fresh in a deep coldframe in the dark. The first flats of Daffodils can be brought in and placed under a Carnation bench. Many cuttings can be taken now and placed in sand and in the benches as Carnations, Geraniums and other soft wooded stock.

Second Week.—A mulch of stable manure may be placed between the rows of Peonies in the field if the weather permits. Purchases may be made of Ericas, small ones and up to plants 36in. in height. Holly wreaths for Christmas can be made now and stored away in a deep coldframe, or in a dry cool basement in the dark. Look over recently potted bedding stock, and see that they are not crowded nor pot bound. Roman Hyacinths should be rather more than showing bud; if they are backward place in a Rose house temperature. Paperwhite and Grand Soleil d'Or Narcissus should also be coming along, others planted now to flower at the end of January. Keep up a good stock of palms and ferns.

Third Week.—Flowering shrubs such as flowering Spiræa Van Houttei, Deutzia, Lilacs, Prunus and Snowball potted now into 8in. or 10in. pots kept in a coldframe until about February, can be had in bloom for Easter. Azaleas not wanted for Christmas can be kept in cool quarters. Gladiolus America can be planted from now on until March either in benches or in 4in. pots and planted out later. For a succession plant every two weeks. Dutch bulbs received late may still

be boxed or potted or placed in 10in. pans. The finer Darwin varieties may be chosen; also Sir Watkin, Von Sion and Golden Spur Narcissus. Pot Gladstone and Queen Alexander Spiræas in 6in. pots, and place below a bench in a cool house, keeping well watered.

Fourth Week.—Bouvardia Humboldtii that have finished flowering

Bowl Filled With Foliage Plants
Aralia elegantissima, Polypodium, Anthurium, Calathea and Tradescantia

can be cut down, the plants being then placed in deep flats and put below a Carnation bench; they will remain dormant until April. The other kinds should be kept in a warm house. Cut the roots into pieces about 1½in. long and place in sand on propagating bench. Outdoor Roses should have soil piled up around the lower part of them, others may have dried leaves and short manure placed over and around them, a wire netting will keep this in position. Ramblers should be laid down

whenever possible and their foliage covered with soil and manure, also standard Roses likewise. Pot Roses may be placed in coldframes and well covered with salted hay. See that you have a stock of Asparagus plumosus and sprengeri coming along. When ordering Carnation cuttings try one or two of the novelties. Cuttings can be taken now.

Fifth Week.—Now is a good time to plant out for the coming Spring; double Cornflowers may be sown now. Formosum and giganteum Lilies planted last October will be 2in. above the pots. Giganteums need a temperature of 60 deg. Another sowing may be made of Sweet Peas for April flowering. Look over young Cyclamen stock and repot any that require it.

Reminders for the Flower Garden in the Middle Atlantic States

By W. H. Waite, Rumson, N. J.

January

Plan beds for coming season so as to know what number of plants to propagate.

Start propagating such plants as Geraniums, Heliotrope, Alternanthera, and all plants of which the stock is limited.

Sow seeds of Vinca rosea and its varieties.

Prune deciduous shrubs that flower on the newly formed wood, such as Hibiscus, Hydrangea, etc.

February

Continue pruning shrubs, trees and vines.

Keep propagating bedding stock.

Shake snow from specimen evergreens as it falls. Keep gutters on driveways free of snow and ice.

March

Pruning may still be done. Catalpa and Hydrangeas are better left to the last when the heavy freezings are over.

Toward the end of the month some of the protection may be taken off the protected evergreens.

Lawns may now be fertilized, top dressed and reseeded, as soon as the frost is out of the ground.

Pansies, Myosotis and Bellis should now be planted.

April

Planting of perennials, Roses, shrubs and trees should now be done.

Protection should be entirely removed from evergreens, Rose and bulb beds.

Lawns may still be top dressed and reseeded; new lawns should now be made.

Gladioli can be planted; all walks should be edged. Mow lawns when the grass is long enough.

May

Shrubs, trees, and perennial plants may still be planted but should be done at once. All of the month may be utilized for the planting of evergreens.

Prepare all beds after the Spring flowering plants are over for the Summer bedding

Toward the end of the month in favorable localities Cannas, Coleus, Geraniums, and all other bedding plants may be planted.

Gladioli should be planted every week or so for a succession.

Dahlias may now be set out.

Lawns will need constant attention; look out for the dry places.

Sow all hardy annuals.
Trim hedges as required.

June

Continue planting out tender plants.

Tender Water Lilies may be set out.

Cultivate the Rose beds and watch for mildew after rains. Tie climbing Roses and vines as they require it.

Foliage and Flowering Plants Artistically Arranged in a Basket for Christmas—Dracæna, Pandanus, Orange, Azalea, Crotons and Ferns

Tender or half hardy annuals can be sown in the open ground.

All Dahlias should now be planted.

Watch for the Rose bugs and aphis and keep them from becoming an epidemic. All decaying flowers should be promptly removed from the Rose bushes.

Newly planted trees and shrubs should be kept well watered. Evergreens should be sprayed if they show signs of suffering.

On the dry lawns keep the sprinklers going.

German Iris may now be divided and replanted. Spring-flowering shrubs should be pruned.

July

Herbaceous borders and flower beds need constant cultivation.

Plants that require it should be staked.

Japanese Iris should now be divided and replanted; strong young clumps give the best flowers.

Keep hedges and lawns trimmed.

August

Evergreens may be planted. If the weather is dry they should be sprayed overhead daily after planting.

Lilium candidum can be planted as soon as received.

Canna beds are benefited by an application of sheep manure or other fertilizer.

September

Divide and transplant Pæonies.

Seeds of perennials and biennials ought now to be sown.

Make cuttings of Geraniums.

New lawns may be made and seeded and old ones renovated.

Dahlias should be sprayed frequently for thrips, and be kept disbudded and securely staked.

October

Procure bulbs for Fall planting; they should be planted as soon as ground is ready.

Transplant all seedlings that are ready.

Cuttings of all tender plants may now be taken.

Roses and shrubs of all kinds can be planted. This is a good month for the remaking of the herbaceous plant border. Any transplanting of deciduous trees and shrubs can also be undertaken.

November

Planting of trees and shrubs must be pushed ahead and finished before severe frosts set in.

As soon as their tops are killed Cannas and Dahlias should be cut down, dug up, and stored in the root cellar. See that all are properly labeled before being put away.

Road making and new construction work may be done to advantage.

All Spring flowering bulbs should now be planted. In favorable localities Pansies may be planted out.

Take tub Hydrangeas and Bay trees into Winter quarters.

Dig all flower beds that are vacant; leave the ground as rough as possible.

Rake up leaves as they fall; save them all for leaf soil; it is a crime to burn them.

December

Protect Roses by mulching. Standards should either be buried or strawed up.

On exposed places, evergreens such as Buxus and hybrid Rhododendrons must be protected from the Winter sun. This may be done by evergreen branches or Corn stalks.

All Rhododendron beds should be heavily mulched with leaves so as to retain the moisture.

Specimen evergreens that require it should be tied in so that the heavy snows may not harm them by breaking or bending.

Protect Pansies and other young plants that are either in the open ground or in frames. Dry leaves make a good protection.

A Few Sprigs of Pussy Willow, a Ribbon Bow to Match the flowers, a neat basket and some Asparagus plumosus adds much to the marketable value of a pan of Tulips

Reminders for the Vegetable and Fruit Garden

By W. H. Waite

January

Sow Onion and Leek seed in the greenhouse for exhibition specimens.

Give air to the Celery whenever possible.

Take covering off, and give air in coldframes on good days.

Sow in greenhouse, Cauliflower, Cabbage and Lettuce, to be planted later into frames for early use.

Rhubarb and Asparagus should be taken into the forcing house, as desired.

Prune all fruit trees, Grapevines and berry bushes.

February

Begin preparing manure for hotbeds.

An early hotbed may be prepared and sown when heat has moderated. Carrots, Cauliflower, Cabbage, Spinach, Lettuce, Radish and any other vegetable required for early use.

Pruning should still be continued.

Spray for San José scale on good still days.

March

Make main hotbeds.

Transplant such plants as are ready.

Sow Celery, Beet and Carrot for first supplies.

Sow in the greenhouse or hotbed, Peppers, Eggplant, Tomato, Cucumber and Melon.

As soon as conditions will allow remove protection from Strawberries, Blackberries, etc.

On a sunny spot early Peas may be sown.

Spraying and pruning should still be attended to.

April

The hardier kinds of seeds and plants should now be sown or planted as soon as the ground is warm enough.

Plant Potatoes.

Sowing of crops should be made at intervals of ten days or so, for succession. Asparagus should be lightly forked over, and drilled up. Plant out Onions and Leeks that were started inside.

Planting of Peaches and other fruits should now be done.

All pruning and spraying for scale should now be finished.

May

Make another sowing of all crops already sown.

Sow early Corn, Cucumber, Melon and Squash.

Thin crops to prevent overcrowding, and keep ground well cultivated.

Plant Eggplant, Peppers and Tomatoes.

Examine Peach Trees for borers.

Spray for Codlin moth as soon as Apple blossoms have fallen.

Dust with Hellebore powder for caterpillars on Gooseberries.

June

Make successive planting of Beans and Sweet Corn.

Look out for Potato and Squash bugs.

Plant Broccoli, Brussels Sprouts and Leeks.

Transplant Celery.

Earth up Potatoes.

Prepare early Strawberry runners.

Mulch small fruits.

Tie and disbud Grapevines.

Begin spraying for brown rot fungus and curculio; spray every two or three weeks until danger is

past. Use a fungicide to which may be added some arsenate of lead.

Attend to the Summer pruning on trained and young fruit trees.

July

Plant out Celery.

Keep Tomatoes tied and disbudded.

Sow for succession, Lettuce, Radish, and other salad subjects.

Pot Strawberry runners.

Plow or dig under old Strawberry bed, and plant to late crops.

Keep ground well cultivated.

Thin out fruits on Apples, Peaches, etc., if crop is heavy.

Regulate young trees by Summer pruning.

August

Vegetables such as Beans and Corn may still be sown for succession.

Harvest Onions.

Plant Shallots.

Celery may still be planted.

Blanch early Celery as it requires it.

Blanch Cardoons.

Keep Tomatoes well tied and disbudded.

Sow Winter Spinach.

Dig Potatoes as they are ready.

Cut away all old canes of Raspberries and Blackberries, and thin out young canes.

Plant out young Strawberries.

Spray for brown rot on late Plums and Peaches.

September

Continue to blanch Celery.

Spinach may still be sown.

Dig Potatoes as they are ready.

Sow Cabbage and Cauliflower in coldframes.

Plant Lettuce.

Turnips and Radishes and any quick maturing crops may still be sown outside.

All runners should be kept off Strawberries.

Young plants of Strawberries may still be planted.

Pick fruits as ready, in dry weather.

Examine Peach trees for borers.

October

Continue to plant Cauliflower and Lettuce in coldframes.

Celery still requires much attention; look out for the rust.

Onion sets should be planted for Spring bunching.

Protect tender crops from the first frosts; also blanch Endive.

Pick all late fruits before danger of freezing.

New fruit trees other than Peaches may be planted; Peaches are best planted in the Spring.

November

Lift and store Celery, Carrots, Beet, and all other crops not yet harvested.

Give attention to Lettuce in frames.

Prepare for next year's crops by plowing and manuring, and by burning rubbish.

Asparagus, Rhubarb and Chicory should now be forced.

Protect Parsley, pot Mint and other herbs for Winter use.

Finish all planting of fruit trees.

Prepare Blackberries and Raspberries for Winter protection.

December

Protect Celery and other crops from severe frosts.

Take advantage of all good weather to do cleaning and digging in preparation for next year.

Ventilate frames on every good day.

Strawberries should be entirely covered over with salt hay after

the ground is frozen to a depth of an inch or so.

Protect Blackberries and Raspberries by burying with soil.

Truck Growers' Calendar

By E. F. Stoddard, Maryland Agricultural College

January

Provide sufficient protection for plants in hotbeds to prevent freezing.

Admit fresh air to frames on good days by opening sashes on the side opposite the prevailing wind.

Start Prizetaker Onion seed in flats or beds for harvesting in July and August.

Sow Lettuce seed for crop to be cut from frames in March or April.

In warm sections, start Cauliflower and Cabbage under glass to be cut from the field in June.

Begin forcing a second crop of Rhubarb and Asparagus.

Prepare manure for hotbeds.

Order seeds for Spring plantings.

February

Prepare a hotbed; allow heat to moderate and plant Lettuce started in January. Small top Radishes will mature in 25 to 30 days between the Lettuce rows. Sow Beets, Spinach, Carrots and Turnips to mature in frames in April and May.

Sow Cabbage and Cauliflower in the north for use in July and August. Sow Lettuce for outdoor cutting in June.

Sow Tomato, Pepper and Celery for use in July and August.

Watch the plants in the frames carefully.

Clip back Prizetaker Onions.

March

Sow Eggplant seed for use in August and September.

Transplant Cabbage, Cauliflower, Tomato, Pepper and Celery when first true leaf appears.

Harden off Cabbage, Lettuce and Cauliflower when they are large enough for the field.

Spray young plants to control diseases.

Plant early Peas on well drained soil that is well prepared, to mature in May and June.

In warm sections plant early Potatoes for use in July.

Shift Tomatoes second time to paper pots if desired.

Clip back Onions in flats.

Turn compost pile.

April

Harden off Tomato plants.

Plant Irish Potatoes.

Prepare Sweet Potato bed for crop to mature in September.

Prepare land and set out Cabbage, Cauliflower and Lettuce and plant such hardy seeds as Parsley, Carrot, Salsify, Parsnips (for use in Fall), Peas, Onions, etc.

Sow Asparagus seed to grow one year crowns.

Start Cucumbers and Melons in dirtbands in frames.

Disk rotted manure into the soil in Asparagus fields as soon as the ground is dry enough.

Sow herb seeds.

May

Sow Celery seed for late crop to mature in October and November, when it is blanched.

Set out a few Squash plants to act as a trap crop for Melon and Squash insects.

Sow Beans, Corn, Cucumber, Squash, etc., and plant out Melons and Cucumbers started under glass.

Make sowings at intervals of 10 to 12 days for succession.

Plant out Tomatoes, Eggplants, Peppers and early Celery. Sow Tomato seed for late crop for use in late August and September.

Cultivate all plowed land not in crops.

Set out Sweet Potato plants.

June

Store all sash and temporary frames.

Set out remainder of Sweet Potato plants.

Clip back late Celery plants, and transplant or undercut late Tomato seedlings.

Destroy trap crop for Melon insects.

Aim for high quality, carefully graded and well packed products.

Make successive sowings of desired vegetables.

Sow Sweet Corn for use in September.

Start late Cabbage and Brussels Sprouts for use in September and October and for storing.

Fasten Cauliflower leaves over the heads.

July

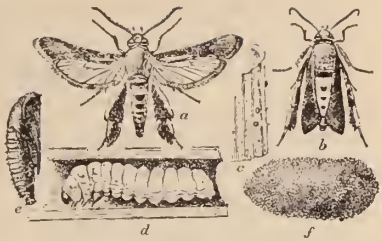
Plant Sweet Corn and Beans for use in late September.

Plant out late Tomatoes, Celery, Cabbage and Brussels Sprouts.

Blanch early Celery with boards for two weeks and begin to market immediately.

Cultivate all crops thoroughly.

When Asparagus cutting season is over, disk in manure applied between the rows and a complete fertilizer.



Squash Vine Borer

Squash-vine borer (*Melitta satyriniformis*): *a*, Male moth, *b*, female, with wings folded at rest; *c*, eggs shown on bit of Squash stem; *d*, full-grown larva, *in situ* in vine; *e*, pupa; *f*, pupal cell. All one-third larger than natural size. The borer burrows through the stems. It is difficult to control and must be watched carefully. It is treated in U. S. Dept. Agri. Bull. 668

Sow Endive for use in September and October.

Harvest Onions.

August

Sow Clover seed at last working of Corn and wherever it can be sown.

In warm sections, plant all vegetables to mature in September and October: Radishes, Lettuce, Beets, Turnips, Spinach, Kale, etc.

Complete marketing of early Celery and harvesting of Onions started in flats.

Dig second early Potatoes.

Apply 150 lbs. nitrate of soda per acre to Asparagus.

Sow Spinach for use in November.

September

Begin to blanch late Celery with soil.

Start to prepare a compost pile for use one year from now under glass.

Sow Winter Spinach for use in Spring.

Sow Lettuce at intervals of 2 weeks for use during the Winter months.

Dig late Potatoes. Harvest Onions grown from seed.

Sow Cauliflower seed to cut from frames in April and May.

Sow Kale to Winter over for use in April and May.

October

Plant cover crops where possible to plow down in Spring.

Sow Cabbage seed for early Spring use.

Haul under cover soil to be used in flats and beds.

Plant Onion sets for bunch Onions in March.

Place some Parsley plants in frames for Winter use.

Plant Lettuce and Radishes in frames. Blanch Endive.

Prepare for storage of root crops.

Dig roots for Rhubarb, Asparagus and Chicory for freezing before forcing.

November

Dig trenches for storing Celery.

Store Potatoes and all root crops.

Cut and burn Asparagus tops.

Apply manure and plow land for early Spring crops. Prepare manure for a hotbed.

Plant Marrowfat Peas in warm sections for use in April and May.

Plant Lettuce and Radishes for December and Carrots for March.

Start forcing Rhubarb, Asparagus and Chicory for use late in December and January.

Clean up fence rows where insects hibernate.

December

Ventilate frames on every good day.

Add more covering to Celery and root crops if necessary.

Place all tools and implements under cover. Clean all metal parts and apply oil to prevent rust. Make repairs and paint wooden parts.

Settle up accounts for this year's business and make plans for the coming year. Aim for higher ideals along all lines.

Order seeds and supplies for early Spring work.

Choice, Well-Grown Vegetables, Properly Staged

Reminders for the South

General Greenhouse Stock

By W. C. Cook, Montgomery, Ala.

January

Top dress, prune, and tie up all Roses intended for Easter forcing. Keep them as near freezing point as you can. Do not overwater, and spray lightly on clear days. Examine closely for greenfly and either fumigate with tobacco stems, tobacco dust or a weak solution of tobacco extract. If possible hold to 40 deg.

Plant Gladioli for Spring flowering. Place Hyacinths and other bulbs coming into bloom in a good light place near glass; if flowers are too close in, cover with inverted pots until they are drawn enough to remove.

Sow seeds of Asparagus, Begonias, Salvias, Vincas, all varieties Petunias, Verbenas, required for early sales.

Sow Sweet Peas in open ground.

Examine Violets, keep clean, if possible, use cyanide for insects. If unable to do so, use nicotine spray; an application of bone meal will be of benefit, also light applications of cow manure water.

Start Hydrangeas for Easter. Keep well shaded until buds break when they can be given more heat; do not fertilize until flowering buds appear when they should have liberal applications of cow manure water twice each week. Propagate Carnations. Pot off those rooted from November cuttings.

February

Pot-grown Roses can be given more heat—50 deg. to 60 deg. is enough. Give ventilation above that point and frequent spraying.

Start Gloxinias and fancy leaved Caladiums. Sow Smilax. Propagate Carnations and all kinds of bedding stock. Propagate Violets from runners.

Graft Roses intended for greenhouse cultivation; also propagate Roses. Continue potting rooted Carnation cuttings. Sow Candytuft outside, also Stocks and Asters.

Hydrangeas can be brought into more heat.

Easter Lilies should be brought along lively now; do not overwater; keep free from greenfly.

March

Propagate Bouvardias from pieces of roots.

Keep on propagating bedding stock: Verbenas and Vinca should be well up in size.

Prepare frames for all kinds of bedding stock.

Plant out Carnations in open ground; a very slight bottom heat is necessary. Start Cannas in sand, moss, or ashes underneath the benches.

April

Place bedding stock in frames. Pot up Cyclamen, Poinsettias, Smilax, Bouvardias.

Stevias and Bouvardias should be shifted into larger pots and plunged in frames.

Propagate Chrysanthemums.

May

Propagate Dahlias.

Sow third crop of Candytuft.

Pot up Cannas for late sales; plant such as are needed for stock. Propagate Poinsettias and Chrysanthemums.

Begonia Glory of Cincinnati

Examine and divide ferns, especially Adiantums.

Propagate Crotons and Dracænas.

Pot off young palms.

Plant out Verbenas that are intended for cuttings in Fall.

Plant out young Roses for Fall sales from open ground.

Plant Dahlias the last of the month.

June

Keep propagating Poinsettias and Crotons.

Plant Roses in house intended for propagating.

Plant Tuberose in frames or open ground.

Cultivate Carnation and Rose ground in open continuously. Clear benches for Roses and Carnations. Pot off Chrysanthemums for pot sales.

Plant Chrysanthemums on benches.

July

Keep shifting Primulas, Cinerarias, Cyclamen, Stevia, Bouvardias.

Pot off Freesias, Easter Lilies, Paperwhite Narcissus.

Plant Violets in frames.

Plant Chrysanthemums for sprays in frames and benches.

Keep pot 'Mums well pinched back.

August

Sow Stocks for Winter flowers.

Propagate Antirrhinums for Winter flowers.

Keep potting Poinsettias, Cyclamen, Cinerarias, Primulas.

Pot off Geraniums for Fall sales, also bulbs as they arrive.

Sow Pansies, Myosotis, Bellis.

September

Shift Bouvardias, giving light soil and do not overwater; watch for mealy bug.

Propagate Geraniums, Hydrangeas.

Sow perennial seeds as fast as ripe.

Pot bulbs for succession as they arrive, and Stevias for last shift.

Sow Stocks and Candytuft.

Propagate last crop of Poinsettias; pot off Cyclamen for last time.

October

Watch Violets to see that no heavy dews get on them. Stir soil frequently.

Give heat to Poinsettias; do not go below 60 deg.

Keep shifting Cinerarias and Primulas.

Propagate bedding stock of all kinds.

Transplant Pansies and all seedlings as ready.

Dutch bulbs should be likewise potted as soon as they arrive.

Azaleas. Place these plants in a cool house and keep well watered.

Lilies intended for Easter should now be brought to light; a temperature of 50 deg. is enough.

Hydrangeas should be brought in and placed in a cool shady house.

Begonias for Christmas ought to receive their last potting.

Stop feeding Poinsettias when center is expanded.

November

Bulbs for late planting can now be planted.

Azaleas for Christmas should be given more heat.

Begin to feed Poinsettias, also Cyclamen.

Propagate Verbenas and all kinds of bedding plants.

Put in cuttings of Alternanthera and Solanum.

Propagate Carnations for early planting.

Propagate double Petunias and Antirrhinums for Summer flowering.

Bring Stevia to heat if wanted for early flowering.

Prepare Chrysanthemums that have ceased flowering in beds for cuttings.

Cannas and Dahlias should be taken in after frost has killed the tops.

December

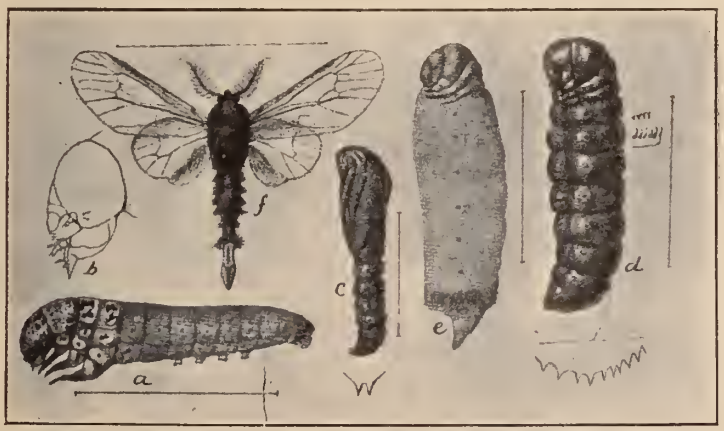
Bring in bulbs for forcing for Christmas.

Poinsettias should now be ready for sale. Let up on the heat, but not enough to cause foliage to drop.

Give a slight application of sheep manure and bone meal to Violets. Remove all old leaves; stir soil lightly, using your fingers.

Pot off Roses from open ground that are intended for forcing, and place in deep frames protecting them from cold rains and frosts.

Continue propagating Carnations.



Bagworm (*Thyridopteryx ephemeræformis*): *a*, Full-grown larva; *b*, head of same; *c*, male pupa; *d*, female pupa; *e*, adult female; *f*, adult male. The larvæ defoliate trees.

(See also page 189

The Southern Vegetable and Fruit Garden

By W. C. Cook

January

Plant Onion sets.

Get frames ready; sow Lettuces, Radishes.

Plant Potatoes for early crop; also Strawberries.

Rhubarb and Asparagus should be given a good topdressing of rotted manure.

Prune and spray fruit trees, Grape-vines.

Plant the smooth varieties of Peas.

Plant Cabbage plants every month.

February

Prune hedges.

Plant Asparagus, Rhubarb, Horse Radish, and more Potatoes.

Sow Peas for second crop, and Beets for table use for first crop; also Spinach, Kale, Clover and grass seeds.

Sow Tomatoes, Peppers, Eggplants and Lettuce for early planting in frames.

Continue pruning and spraying against San José scale.

Prune Roses in open ground.

Spray with Schnaar's Insecticide for white fly.

Plant Red Clover and Alsike for next year's use.

Kale can be sowed every month from now to September.

Plant fruit trees, hedge plants, small fruits.

Sow Kohl-Rabi in frames.

March

Transplant such plants as are ready for early planting outside. Paper pots should be used.

Lettuce, Tomato, Egg and Pepper plants can be sown in open ground the latter part of this month, using muslin sash for covering on cold nights.

Wrinkled and other Peas can now be sown in open ground.

Sow Radishes, Spinach, Mustard.

Prepare beds for Spring bedding plants.

Finish spraying and pruning.

Sow table Beets for succession, also Radishes.

April

Plant out of frames Tomatoes, Peppers and Eggplants.

Sow Sugar Beets, Corn, garden and field Cucumbers, Parsley, Parsnips, Salsify, Spinach for succession.

Plant Kohl-Rabi plants, Onions for large tubers, Alfalfa, Potatoes.

Sow Onion seed for sets and Okra.

May

Keep ground well cultivated.

Sow Beans of all kinds, Watermelons, Canteloupes, Cucumbers, Okra, Radish, Mustard for succession.

Sow Turnips, Pumpkin, Cow Peas, Spring Squash.

Set out Sweet Potato plants.

Use insecticides on all plants showing any sign of bugs.

Stake Tomatoes planted last month; mulch around roots.

If any signs of greenfly, spray with nicotine solution.

Earth up Potatoes.

Transplant Celery for first crop.

June

Sow for succession Radish, Turnips, table Beets, Corn, Cucumbers, Kale, Beans (last crop),

Musk and Watermelons, Mustard, Cow Peas, Spinach, Winter Squash, German Millet.

Plant Tomato plants, also small Peppers.

Keep a close watch for bugs.

Spray Tomatoes with Bordeaux mixture. If any disease appears among the plants remove and burn them, and lime the ground well where they stood.

July

Plant out Celery plants.

Keep Tomatoes tied and disbudded; spray often.

Pot Strawberry runners.

Thin out fruit, remove all diseased leaves and burn them.

Keep cultivating—the oftener the better.

Mulch Tomatoes, Eggplants, Peppers and Strawberries heavily. Leaves are best; see they do not suffer for water.

Sow Crimson Clover, Cucumbers, Kale, Mustard, Turnips.

Plant late Potatoes. Finish planting Sweet Potatoes.

August

Sow Beets, Red Clover, Crimson Clover, Lettuce, Radish, Kale, Rape, Rye, Spinach, Turnips, Mustard.

Plant Cabbage plants and Onion sets.

Cultivate and begin to hill up Celery.

Sow Cabbage seed for plants.

Keep runners off Strawberries.

September

Plant Strawberries.

Sow Lettuce, Spinach, Turnips.

Plant Onion sets.

Spray for white fly and other insects.

Cultivate your ground; where vegetables have matured and crop gathered, give a coating of lime and work it in well.

October

Celery should be watched and banked up. If any sign of disease appears apply remedy at once, or remove the diseased plants.

Clean up vacant ground. Cultivate deep and apply fertilizers. Burn all rubbish; where necessary a slight application of salt will be beneficial.

Remove all Tomato leaves, roots, plants, and sterilize the soil if possible. Change places every season.

November

Lift and store Celery.

Prepare frames for Lettuce, which can be sown now, also Radishes and such other vegetables as you have a market for.

Clear off Asparagus beds; mulch with cow manure or leaves.

Plant fruit trees, Roses and small fruits.

Prune Blackberries, Raspberries.

Prepare ground for early planting.

December

Clean up generally.

Watch your frames; do not allow them to remain idle.

Have compost prepared for change of soil in frames.

See that your fertilizer pile which has not been scattered, is protected from rain.

Gather in shade tree leaves, pile up and cover with fresh manure if possible, to rot for Spring use.

Planting Table for Vegetables in the South

	1st Planting	2nd Planting
Asparagus	Nov. 15 to Dec.	Feb. 15 to March 15
Beans (Bush)	March 1 to May 15	July 15 to Sept 1
Beans (Pole)	March 15 to June 10	July 15 to Aug. 15
Beets	Feb. 1 to April 15	July to Sept.
Cabbage	Jan. 1 to April	July 1 to Sept.
Carrots	Jan. 15 to April 15	July to Sept.
Cantaloupes	Feb. 1 to May 15	
Cauliflower	Aug. 15 to Oct. 1	
Corn (Garden)	March 1 to May 15	July
Cucumber	March 15 to April 15	July 1 to July 15
Collards	March 15 to April 1	July 1 to Sept. 15
Egg Plant	Feb. & March in boxes	April to June in open
Endive	Aug. to Oct.	
Lettuce	Feb. 15 to April 1	Aug. to Nov. 1
Mustard	Feb. 1 to May 15	July 15 to Nov.
Okra	March 1 to May 15	
Onion sets	Jan. to April	Aug. to Dec. 1
Onion seed	Not planted in Spring very largely	Aug. to Nov. 1
Parsley	Feb. 1 to April	Aug. to Oct.
Peas (English)	Jan. 1 to April	Aug. to Dec. 1
Pumpkins	April 1 to June	
Peppers	In boxes or beds in Feb. Open ground March 15 to April	
White Potatoes	Jan. 1 to May	July to Aug. 15
Sweet Potatoes	In beds Feb. 10 to March In open March 15 to May 15	
Radish	Feb. 1 to May 15	Aug. to Nov. 1
Rape	Jan. to May	July to Oct.
Spinach	Jan. 15 to April	Aug. to Nov.
Parsnip	Feb. 1 to May 15	Aug. to Nov. 1
Squash	March 15 to June	
Tomato	In beds Feb. 15 to April	June 1 to July
Turnips	Jan. to Feb. 15	July, Aug. to Oct. 1
Ruta Baga	Jan. to Feb. 15	July, Aug. to Oct. 1
Water Melon	March 15 to June 1	June 15 to July 1

Gardening in California*

Reminders for the Flower Garden

By H. R. Richards, Los Angeles, Cal.

January

Clean up shrub and herbaceous borders before heavy rains and see that all drains are free.

Sow the hardiest annuals for early flowering. Plant out Pansies.

Bring some prepared soil under cover for use during the rainy season.

*These notes were written particularly for Southern California

Place a little litter around stock plants of Chrysanthemums.

Finish pruning of shrubs, both deciduous and evergreen, and surface the shrub borders with compost or old manure.

Plant out Fall raised seedlings of Delphinium, Coreopsis, Wallflowers, Campanulas and other biennials and perennials.

Good Bulbs Can Be Grown on the Pacific Coast
One of the up-to-date Narcissi, Narcissus Evangeline

Give a light topdressing of compost to borders and beds where bulbous plants are pushing up.

February

Look out for aphis on the young Rose shoots and spray with soap solution when necessary.

Look over the Dahlia roots and bring out to the light any that are starting.

Plant Gladioli, Begonias, any left over Lilies, Crinums, Amaryllis or anything of this nature left over.

Sow Sweet Peas, Marigolds, Verbenas, Cornflower and early Asters. Also Mignonette among the Roses.

Stake or otherwise support newly planted trees and shrubs.

Sow Acacias of all kinds and any other hard shelled seeds. Soak them in hot water and let them stand in it a couple of days before sowing.

Clean out the old clumps of Romneya Coulteri to give the young shoots that are forming room to develop freely.

March

As soon as the ground can be got into good condition plant Dahlia roots, but if very wet leave them for a time.

Stir around the old Chrysanthemum stools to induce a free break of young shoots.

Plant out seedling Cyclamen, Salvias and other semi-tender stock.

Watch for aphis on Sweet Peas and dust with wood ashes or tobacco powder if any insects are seen.

Look closely after scale on Oleanders and other shrubs particularly liable to its attacks. The Pepper tree should be especially closely looked after and if in bad shape cut back and cleaned.

Alternantheras, Iresines and other tender carpet bedding plants may be planted out now.

Finish planting Tuberoses, Gladioli and all kinds of Lilies excepting those from cold storage.

April

Common soapsuds is good to spray Roses infested with aphis; use sulphur for mildew.

Use dry arsenate of lead insecticide should cutworms or corn bugs get busy with the tender foliage of shrubs or plants.

Plant out green Dahlias and be sure to stake each one separately.

Sweet Peas for seed should have a few of the earliest flowers removed, a better crop being thereby insured. When grown for cutting, keep the flowers cut regularly and allow none to go to seed.

Keep the cultivator going after rains to prevent the land drying and caking over on the surface.

Sow Salpiglossis and Zinnias in the place where they are to bloom as they do not transplant as readily as some other flowering plants.

Clean out old growth that has flowered from vines and tie in where necessary.

Put in Carnation and Chrysanthemum cuttings.

May

Allow Tulips, Narcissi, Hyacinths and other Dutch bulbs to make a good growth and at least partially ripen this before lifting for storage.

Sow late flowering Marigolds and any other annuals in a more or less shady place. Portulaca may be sown in a sunny position. Thin out Cosmos and similar plants for Fall flowering.

Prepare young stock of Cuphea, Pentstemon, Salvia, Begonia and others to take the place of Dutch bulbs when these are lifted.

Take up, divide and replant clumps of German Iris after flowering and make late plantings of Canna for Fall flowering.

Another of the Finer New Narcissi (Narcissus Barrii Ruby)
Will this find its way to the Far West?

Insert the principal crop of Chrysanthemum and Carnation cuttings and pot or plant out those earlier rooted.

Clean over the beds of Asparagus plumosus and give a good coat of manure. If stable manure cannot be had use one pound of bone and blood to each square yard of space.

June

Remove the earliest flowers of Dahlias, as they seldom come of good shape or color. The side flowers are better.

Plant Chrysanthemums where possible in shallow trenches where irrigation can be given in hot, dry weather.

Dry off Roses now that are intended for Fall and Winter blooming and cut out all old, weak growth. Prune back the main shoots to about one foot from the ground.

Many flowering bulbs may now be lifted. Do not leave them in the sun but lay them out under a shed to dry gradually and leave the foliage on.

Prick off young seedling trees from early sowings and sow Eucalyptus, Pines, Cypress and evergreen shrubs.

Pinch back the young growth once on Eugenia myrtifolia, trimmed Boxwoods and Bay trees, Privets, Euonymus or other specimens.

Make depressions around newly planted trees and shrubs and give a thorough soaking of water. Repeat this and cover up again as soon as the surplus water has drained away.

July

Make the first sowings of Pansy for very early work. The best place to sow is under a lath shade, using light soil covered with leaf mold.

Plant out Caladium esculentum that was started some time ago in pots.

The earliest flowering Cyclamen should now be ready for the final potting. Do not wait for them to become potbound, or premature flowering will result.

Sow Primula sinensis, P. obconica, Cinerarias and Calceolaria for early pot plants. A few pots of Winter flowering Begonias may also be sown and cuttings inserted.

Prepare the soil for Winter flowering Sweet Peas and if at all inclined to the poor side give a good dressing of bone meal. Keep the soil wet around the roots of the flowering rows.

Insert Hydrangea cuttings and repot small stock.

Cut back Cecile Brunner bush Roses as hard as possible after drying off. Climbing Brunner should not be dried so severely and only the old wood taken, laying in the newly made growth.

August

Make plentiful sowings of perennials of all kinds, especially Delphiniums, Antirrhinums and any of the yellow composites. The earliest of the Winter flowering Sweet Peas should go in this month.

Mulch the borders where Tuberous rooted Begonias are flowering and water freely to ensure as long continued blooming as possible.

Finish the lifting and drying of Freesia and Calla bulbs and pot up the bulbs needed for earliest blooming.

Home grown bulbs of Paperwhite Narcissus, Hyacinths and various others should be potted for early work and the French imported stock as soon as it arrives.

Poinsettias should be planted in their flowering quarters by now if large bracts are needed. There is still time to propagate young stock

for pot plants. Throw the cuttings into cold water for half an hour before inserting in the sand.

Pinch the shoots of Asparagus plumosus regularly if wanted for sprays and place strings to those plants that are to be grown this way.

September

Sow plenty of Mignonette for Winter flowering when this is in demand. A good sowing of Ten-week Stocks should also be made.

A Large New Improved White Trumpet Daffodil
(Narcissus Sybil Foster)

Cut over Verbenas, Salvias, Lantanas and Heliotropes in order to get a good batch of cuttings to put in later when the weather is cooler.

Cut around any large specimen trees that have to be moved during the Winter or Spring in order to check the growth and cause the production of short stubby roots.

Prepare the soil for, and plant, Violets for Winter and early Spring flowering. They like a moderately heavy soil with good drainage.

Get ready for planting Dutch bulbs by deeply spading the soil in the beds and enriching it with well decayed cow manure. Add plenty of sand also if the soil is heavy.

Sow the main crop of Pansies.

Geraniums of all kinds root freely now in sand under a lath shade if kept moist.

Keep up the irrigating on everything that is still in a growing condition.

October

Spread a little manure around Winter flowering Roses and water thoroughly. If no cow manure can be obtained use blood and bone.

Pot up Lilium giganteum as soon as received and plunge the pots in sawdust or other material in as cool a place as possible.

The early Chinese Lilies will be showing above the soil and should be freely watered during dry weather from now on. Spread a light mulch of manure on them if it can be spared.

Continue to sow Pansies and other annuals as they are likely to be wanted.

Feed the Chrysanthemums liberally until they begin to show color. Those growing outdoors should be covered with cheese cloth now.

Sow Cyclamen, late Primulas, Calceolarias, Cinerarias, and feed the plants now advancing for flower.

Commence the propagation of Alternantheras, Iresines, Coleuses, Verbenas, Salvias, Lantanas, Heliotropes and all other Spring bedders.

November

Feed Poinsettias with dried blood or blood meal, this greatly improving the color of the bracts. Nitrate of soda or soot helps the color of the foliage. Be sure the roots are not allowed to get dry or the leaves will fall.

Lift Jerusalem Cherries from the open ground and place in pots for decoration.

Cinerarias, Primulas and Calceolarias do well under lath until the rainy season starts.

Plant Ranunculuses and Anemones and any other late arrivals. No matter how small the bulb, always cover at least three inches.

With the shorter days keep the cultivation going regularly between the lines of Winter Sweet Peas. This helps to keep them growing vigorously, without which few flowers will be produced.

Plant Matilija Poppies (Romneya Coulteri), being careful not to damage the roots in any way.

Clean up any vacant places that are to be sown to native plants next month or in January in order to give them at least an even start. Burning over is a good beginning.

December

Excepting in flood localities keep on with the preparation of land for all classes of early Spring crops. Where land is apt to be overflowed the firmer the surface is left the better.

Transplant any large specimens or evergreens that have to be moved and see they do not lack water at the root until the rains set in.

Wherever Bermuda or "Devil" grass is present use every endeavor to get as much as possible of it rooted out entirely before the Spring rains.

Carefully weed all seed beds before the weeds get too large to handle without risk of injury to the plants.

Finish pruning deciduous flowering trees at once.

Lift flowering shrubs that are to be forwarded in pots for conservatory use. A very light hot bed is useful for starting. The same applies to Kentias and other palms lifted at this late date.

Vegetable and Fruit Garden

(California)

January

When Winter Tomatoes and Eggplants are coming into bearing see that a relief ditch is made to carry off superfluous water.

Push forward with tree planting, all deciduous fruits being better for being in the ground early.

Allow weeds to grow in low orchards if no cover crop has been planted. This will hold the soil in case of heavy rains and be useful material for discing in later. Certain toxic properties in the soil left by the trees themselves are also removed by the plants.

Make a large sowing of Tomato and Pepper for planting after the rains.

Sow Lettuce, Beets, Swiss Chard and Cabbage in quantity both for table use and for chickens.

Clean over outside Asparagus beds and dress with manure.

Use any spare time liming tree stems and see that all pruning is finished.

Watch for frosty nights and always have the smudge pots ready for use.

February

Select good, medium sized Sweet Potatoes for sets and lay them out to harden a little before placing on a mild hotbed for early plants.

Cover Tomato plants in flats by some means during heavy rains or if this is impossible raise them on bricks or wooden runners to ensure perfect drainage.

In locations where high winds are frequent prune all deciduous trees back to 18in. before planting.

In gathering Navel Oranges cut the stem close to the fruit with the clippers and handle carefully, using a sack that can be dumped through the bottom into the box to avoid bruising.

Keep off the land as much as possible in wet weather and have all implements cleaned, repaired and ready for the Spring rush of plowing and cultivating.

Finish up the pruning of Grape vines with as little delay as possible and burn up all prunings on the ground that are not needed for cuttings.

March

As soon as the ground can be got into shape sow early Cucumber and other vine crops.

Early plowing is always advisable in Walnut orchards and the most successful growers plow very shallow, but are careful to level thoroughly later.

New Ruffled Gladiolus
The variety is Miss Helen Franklin, shown by Thos. Cogger, Melrose, Mass.

Dust early crops with Paris green or some of the arsenate of lead preparations to check chewing insects which are ravenous for the tender growth.

Sow Globe Artichokes, Asparagus, Eggplant and Peppers as well as all small root crops.

Prune the lower branches of Lemons and Oranges so that the

growth stands well above the ground yet not sufficiently high to allow the sun to reach the stems. Remove any Winter protective material used, burn it and use a good fertilizer.

Disbud newly planted peaches and plums and finish up Fig pruning.

Plant the main crop Onion sets.

Damage the vines of Peas as little as possible when picking, and sow other rows for a later crop.

April

Prepare the soil for sowing sour Orange stock seed and if possible use a piece of ground that has not been irrigated much.

Sow the main crop Beans, Eggplant and Corn and keep the cultivator going after every rain to prevent the soil baking under the hot sun.

Sow Watermelon and Cantaloupe in soil previously well prepared.

Give thorough cultivation to the land recently planted to fruit trees to create a dust mulch.

Make the most of good rhubarb pullings now while the price is good. There will be plenty of time for the plants to recover later.

Plant Sweet Potatoes for early crops and do not crowd them. Four feet apart is about right for the rows.

Follow early Potatoes with Lima Beans.

Keep the irrigation going on Lettuce and thin the rows early.

Make plantations of Globe Artichokes from selected suckers and plant out Jerusalem Artichokes for hog feed.

May

As the weather gets warmer allow the Tomato plants to get bigger before planting out, as large plants cut back stand drought better than smaller ones.

Sow sour Orange stock after soaking in water for 24 hours and cover at once with clean sand. Some shade such as lath will be necessary in most cases when the seedlings appear.

Dust Eggplant with Paris green and give a dressing of sulphate of potash.

Thin Peaches and Apricots when possible. It takes more out of the tree to grow a stone than the flesh of the fruit.

Have a good sowing of Cauliflower made now to plant out after early crops have matured.

Bud all young stock that is ready and examine earlier budded stock to see that the ties are not "growing in."

Plant out young sour Orange stock and finish all Citrus fruit planting with as little delay as possible.

Clean over Strawberry beds as soon as the fruit is gathered, then dry for a couple of weeks and fertilize before turning on the water for a later crop.

June

Remove sucker growth from all orchard trees and finish up the spraying as soon as possible.

Look out for aphis in Melons and Cucumbers and lose no time in dusting with tobacco powder as soon as any insects are seen.

Cool nights and hot days tend to mildew. Use sulphur freely

early in the morning on Beans, Peas, Cucumbers and other crops likely to suffer.

Sow Brussels Sprouts and Kale for Fall use but hold the later sowings until next month.

Sucker Corn and use a powder insecticide to poison the Corn beetle.

Tie up early Celery to blanch and plant out later rows.

Make another sowing of Pole Beans and Squash to take the place of the early crops when they are through.

Admiral and Yorkshire Hero are the best Summer Peas to sow but the crop is at best uncertain.

A thorough irrigation now will be of benefit to late Peaches, Pears and Walnuts. Old trees should have a good phosphate dressing.

July

Disc and plow under all crops as they cease to be profitable, as this will ease the land and prevent the propagation of cut worm and other insect pests.

Watch for borers in old Peach trees that it is advisable to save, but any that are to be cut out should be attended to at once.

Romaine will be in demand from now on and should be given good soil and plenty of water.

Plant out Leeks and Winter Onion sets.

Cultivate freely among Okra before it covers the ground and make more sowings of this and round Spinach.

Cut off the stock above the buds of young Orange trees and leave a few inches to tie the bud to prevent its being blown or knocked out.

Sow Kohl-rabi and late Brussels Sprouts and Kale.

Cassabas may be sown on good but not too rich land for early Winter use.

Late vegetable crops must have ample moisture and the cultivator must follow irrigation. A little of any highly nitrogenous fertilizer is of great assistance now when irrigating.

August

Sow Cucumbers and Squash again and remove plants that have ceased to be profitable.

Deep plowing and thorough cultivation after irrigating is the best preparation of land for Winter crops. Sow a cover crop that matures quickly on any land not needed for Fall crops.

Cut off the stock close down to the bud union in Citrus stock and place a stake to each one. Cut neatly and smear the cut surface with paint.

Plant Tomatoes and Peppers again for Fall crops.

Prepare Potato land with especial care and plant late varieties.

Clean up Raspberry, Loganberry and Blackberry rows, cutting out the old wood and burning it to give the young wood a chance to develop.

Prepare soil for new Strawberry plantations.

Do not allow Asparagus beds to dry up, but keep the growth going as late as possible to induce the promotion of strong underground crowns.

September

Go over the young Citrus rows and bud any trees that were not

large enough in Spring. Keep the young stock free from weeds and scale.

Make the principal sowing of Winter Peas now on clean, well prepared and deeply cultivated soil.

Continue to sow Carrots, Turnips and other root crops as they will

Dahlia King of the Autumn

be needed, thus insuring fresh succulent roots in Fall and early Winter.

Plant out Brussels Sprouts, Kale and other Winter greens and sow Swiss Chard and Spinach again.

Where time can be spared, thin out the branches of Peaches, Nectarines, Apricots and other deciduous fruits to allow of a thorough ripening of the new wood.

Prepare the necessary number of Peach pits, Plums and Apricots, and stratify them for sowing later.

Make a good sowing of Rhubarb for Spring planting if roots are likely to be scarce.

Sow Tomatoes and Eggplant for Winter and early Spring use in the warmer locations.

Head down any Lemon trees that are getting too high, and prune back unsightly branches after gathering fruit.

October

Continue spraying and fumigating on every chance occasion, the cool nights at this time of year being especially suitable for the latter operation.

A Variety of Fuchsia triphylla
Easily grown from cuttings taken in the Spring and grown-on cool

Prepare plenty of good compost, sand and other requisites for early sowing of vegetable plants; also clean up and repair lights, flats and other equipment that have been more or less out of service. Clean up and pile all drying racks and roof them after they are done with for the season.

Look over early stratified seeds, and plant in rows any that are started. Sow English and Black Walnuts for stock purposes.

Make heavy plantings of Cabbage and Cauliflower.

After the Walnut harvest, clean up the orchard, burning up all prunings or dead branches and tidy up finally.

Clean out ditches, especially where land is low lying or likely to be overflowed.

Keep the water going on deciduous stock that may be a little behind in growth in order that it may be well developed before digging time.

November

Transplant any large deciduous fruit trees that have to be moved. If too large to ball easily, cut them back hard and remove any remaining foliage, cut the roots back a little and plant quickly, giving plenty of water until re-established.

Give a thorough dressing of manure to berry plantations.

Sow the early ripening varieties of Tomatoes such as Earliana

Method of Packing Choice Dahlia Blooms
Packed firmly and covered over with wax paper, the flowers will not bruise

under glass and prick off as soon as ready into flats. Keep hard and as sturdy as possible during Winter.

Give a good cleaning over to Peppers and Eggplants that are coming into bearing for Winter, and water only sufficiently to keep them growing.

Look over young Citrus stock frequently for scale insects and spray directly the first ones are seen, doing this until all are clean.

Commence digging the earliest trees of deciduous fruits, first making sure that the land is moist.

Make regular sowings of head Lettuce in quantities sufficient to meet demand.

December

Dig Horseradish and prepare for market, retaining the smaller roots for sets. This crop is difficult to eradicate and for this reason the land must be thoroughly worked over after lifting.

Finish up the digging of all deciduous fruits, Walnuts and Pecans and smooth the ground over before rains come if possible.

Sow Parsley for early Spring demand.

Divide and replant Chives.

Earth up the latest Celery and see that the ground is drained at the lower end.

Cover Dandelion, Rhubarb, Asparagus, Chicory and similar crops for early use.

Do not leave trees with their roots exposed but lay them in or cover with moist burlap until ready to pack or plant.

Sow Peas and Beans again for succession crops.

Dig and store Parsnips, Winter Radish and other roots.

Plant Potatoes on well drained land for early crops.

The Cut-and-Come-Again Flower (Shasta Daisies)

The Nurseryman's Year

By Joseph Meehan

January

Grafting of fruit and other stocks is in order this month.

Prepare book of stock in which to check off sales.

Make cuttings of trees and shrubs, tie in bundles, bury in moist sand in cool cellar.

Place orders for stock for sales or for own planting.

Almost all seeds for Spring sowing should be kept in moist sand or at least in airtight cases.

It is a good time to shape up trees and shrubs intended for Spring sales.

Consider plans to embellish the entrance to your grounds. It pays.

Get in a label supply for Spring use, as many of them could be written now.

Many perennials make good plants for Spring sales if seeds are sown now.

Manure may often be hauled and spread to advantage in this month.

Keep watch on stock in cold storage, that all may be going well.

See to marking all fertile (berry bearing) Hollies in order to know them when their berries have fallen.

See that all stock, out of doors or in, is free from injurious insects or fungi.

Make list now of all shrubs and trees with colored bark or with other desirable Winter features.

Keep up the making of evergreen cuttings, starting them under glass at once; hauling of wood cuttings of trees, etc., may also be continued, for Spring planting.

February

Give attention to packing boxes, bales and materials, to be ready when the rush of Spring is on.

Advertise what you have; and let your stock deserve your praises.

Bamboo canes for staking are very useful. Get in a stock of them.

The glazing and repairing of sash frames may be done.

Stock for layering should be cut back soon. Young shoots are needed close to the ground.

Prepare a book in which to record the date of flowering of trees, shrubs, etc.

The making of evergreen cuttings should be completed early this month. Prune up to six feet trees for street planting; low branched ones are often preferred on lawns.

Sow evergreen seeds in pots or boxes indoors now. Better results follow than from outdoor sowing in Spring.

Do not chop down all crooked trees. Many gardeners receive occasional calls for them.

Many Privet and other hedges may be cut down now to advantage, looking to new growth in Spring.

Take another look at packing and shipping materials for Spring use. Pass out advertising matter to printers.

Look through the tool house. Spades, forks and all needed tools should be in place.

March

Lose no time in digging and shipping stock. Spring is short. Get advertising matter off early this month.

Bride's Bouquet Made of White Show Dahlias and White Pompon Dahlias

Make mud puddles in which to dip roots of all stock before packing it. Mats, straw, string, nails, etc., will have been provided before this.

Cut shoots of Pussy Willows, Forsythias, etc., placing them indoors, to have early flowers. There is a good sale for them.

Boxes prevent March freezings of contents. Therefore ship early. Insure your reputation by seeing that all stock shipped is clear of insects.

Do not uncover stock too soon; late freezings are the worst of all.

Cut well back Hydrangeas and all other shrubs that flower in Autumn. Spring flowering shrubs may have little shaping, not much, or flowers will be lost.

The blue and other Spruce trees are the delight of red spiders. Spray them now.

Make root cuttings of Blackberries and other small fruits as well as of trees, etc., known to grow from roots. Set them as soon as possible.

Outdoor grafting may be done this month often; scions must always be cut and kept moist in advance.

Globe and other shaped shrubs are in demand. Prepare them by a pruning now.

Sow tree seeds at the earliest moment; should frosts come later they won't matter.

Pot seedlings of perennials, and those from seeds sown in Winter.

A great call for fruit stocks and stock of all kinds is the prospect. Prepare for it.

Secure hands enough to plant your own stock as well as to dig for selling; plan too to keep them satisfied for the season. See that your delivery department is in good order; deliver on time and keep your trade.

Plan ahead for work for your men in wet weather. It can be done.

Give attention to the ornamentation of your own grounds. It pays and pleases.

April

Set out early all cellar stock, grafts, cuttings and plants. Plant early all herbaceous plants in pots, and divide outdoor clumps of the same.

Commence noting in book date of flowering of trees and shrubs.

Sow acorns and all seeds not sown in Autumn.

Finish grafting fruit and ornamental trees this month.

Hold back stock in cold storage for late sales.

Prune back closely all hard-wooded stock like Oaks and Beech, which do not transplant easily.

Pot stock for Summer sales and late customers.

Secure enough men so that no work has to be neglected at its proper time.

Commence home planting with deciduous stock, ending with evergreens.

Have mud puddle close to packing shed in which to dip roots of stock about to be packed.

Do not delay home planting for any other work; early planting is the making of the plants.

Better not disturb Snowballs and like shrubs, the flowers of which will be in demand for Memorial Day.

Magnolias and Tulip trees are known to require great care in transplanting. The best way in many cases is to cut them back almost to the ground at planting time.

Pæonies start quickly, calling for early dividing of their clumps.

Small, young stock is best planted where watering and shading can be given them.

Set out a good block of evergreens; the demand for them is growing.

Watch closely beds of seeds sown in Autumn. Seeds like darkness while germinating, but not so much when above ground.

Florists find vines in pots in demand the Summer through. Pot them now. Keep the public advised of what you have to sell.

May

Photographs of trees and shrubs help sell stock. Take some for catalogs.

Keep up sprayings to have clean stock to sell.

Water evergreen stock lately planted; deciduous stock rarely needs it in Spring.

Poison vines may be destroyed by spraying with strong solutions. With no foliage permitted to come the plant dies.

Watch seed beds closely to help seedlings.

Between pruning and tying encourage straight leaders to trees, etc., that need it.

Spring flowering shrubs should be pruned when flowering is over.

When plants are in flower label such as are not easily known without labels.

Remove seed pods from Rhododendrons and other plants, when not wanted.

Early ripening seeds of Maples, Elms, and many other sorts, sow now.

Collect all heeled-in stock and plant it properly.

Pinch out central shoots of side branches of evergreens, where bushiness is desired.

Plant out hardy stock that has been under glass for various purposes.

Pot evergreens for use for decorative purposes.

See that the entrance to your place is well planted with trees and shrubs.

Label fruiting Hollies before berries fall, to know them from sterile sorts later.

Place orders with collectors of seeds for what you will need through the season.

As Peach stones sprout in seed beds remove plants to nursery rows for budding later. Prepare orders for stock that you find you need.

Shade for seed beds is always beneficial, but the heavy shade of Winter can be removed.

June

Commence propagating from cuttings of shrubs and trees, half ripened wood under glass Very many root in this way.

Gather, clean, sow seeds that have ripened. Many make salable plants by Fall.

Layering starts as soon as shoots are of length to permit it.

Spraying of stock needs attention now.

Corsage Bouquet of Lil of the Valley for St. Valentine's Day
Notice how the hearts are introduced

Privet hedges need first pruning this month. Don't forget that young shoots root freely under glass.

Peach stocks budded in late June make salable plants by Fall.

Inarching is often possible in June where sufficient growth has been made.

It is not too late to sow Birch, Elm and other early ripening seeds if not yet done.

Hydrangeas, pot grown, taken from cold storage and planted now produce late flowers for florists' use.

Keep cultivator going among stock, to encourage growth and keep down weeds.

The last of Spring blooming shrubs are through now. Give them a good pruning, before they make much growth.

Columbines, Larkspur and other early seed ripeners make good plants from seed sown now, under glass preferably.

Give close attention to seed beds. Get weeds out before they get strong.

Vines in pots for Summer sales may require staking by now.

Unless for dwarfing purposes the central shoot of evergreens should not be taken away, but side shoots may be taken off to promote bushiness.

June should see the planting out of all hardy stock having had greenhouse protection.

Your nearby florist or nurseryman is always worth a visit, for mutual information and pleasure.

Make out your shortage list, looking to replenish stock before Fall sales.

July

Bud all trees in condition to admit of it, both fruit and ornamental trees.

Make list of all stock on hand to compare with that of last year and from which to check off coming sales.

Prepare to glaze and repair all sash, greenhouse or frames.

Continue the layering of stock as the lengthening shoots permit of it.

The pink and the double-flowered Dogwood are good sellers. Bud them now.

Prepare potting soil by mixing top soil of meadow with manure, layer by layer.

Keep cultivator going. Its use is as good as a coat of manure.

Prepare catalogs and advertising matter for Fall sales.

July finds growth of shrubs and trees ready for indoor cutting making.

Many seeds are ripening. Gather them for sowing or selling.

Keep up the inarching of choice plants. Many broad-leaved evergreens, such as Euonymus, English Laurel, Bay can be rooted by cuttings indoors now.

Irrigate and water all small stock. The overhead system of water pipes is excellent.

Visit brothers in the trade, to give and receive new ideas.

See to labeling everything not easily recognized when out of flower or foliage.

Make best of indoor work for stormy days.

With stock list completed, make out order list for what must be purchased.

The more foliage trees carry, the stronger they become; therefore spray to keep down insects, etc.

See that tools left about in the hurry of Spring are collected, and are in good order.

August

The grafting of evergreens under glass is in order this month.

Keep up labeling of stock that is not well recognized when foliage falls.

The more foliage the stronger a tree becomes, therefore, prune only what shape demands.

Keep up budding; many stocks can be worked even in September.

Watch closely for insect and fungi enemies.

Large trees, root pruned now would transplant well a year or so hence.

Prepare for the transplanting of evergreens next month. It is an excellent time.

Layering should finish this month, unless for stock to remain two seasons.

Root out all Fall Grass on lawns before it sheds its seeds.

Pruning shrubs to form globe and other shapes should be looked to now.

Fall packing of stock will commence next month. Are all things ready? All Chionanthus bushes are not seed bearing; therefore mark now such as are. Do the same with Hollies and other non-seed-bearing shrubs and trees.

Half ripened wood under glass, of shrubs and trees, root freely now. Many "hard cases" root in this way.

Gather seeds as they ripen for sowing in a month or two.

Commence advertising stock; sales follow the making known of what you have.

Keep up cultivating the growing stock.

Sow new seeds of many perennials now. Many resulting plants will flower next Summer.

See that seedlings and shallow rooting stock are well supplied with water.

Have photographs taken of trees and shrubs for catalog. It helps sales greatly.

Keep up record of flowering trees, etc., as advised some months ago.

Give employees more or less vacation this month. It is profitable to all concerned.

September

Make a list of trees and shrubs with handsome foliage, as leaves change.

Label trees difficult to recognize when bereft of foliage.

Packing and shipping starts this month; do not overlook the mud puddle for roots.

Transplant evergreens this month, giving them lots of water.

Get catalogs mailed; the public must know what you have to offer.

Gather Magnolia and other seeds, wash pulp free when they need it, sow at once or preserve in damp sand until Spring.

See that glazing and repairs to all glass structures are completed this month.

The cultivator may be put away now; late growth is not desirable.

Seed pods on Althæa are objected to by many; mark double (seedless) ones for future plantings.

Make a list of trees and shrubs having handsome colored berries, for future use.

Strip foliage from deciduous stock and plant them now. They become root established before Winter comes.

Pass out seed orders to collectors for what you intend to use.

Final pruning of evergreen and other hedges should be given now.

Corsage Bouquet of Cattleyas and Adiantum

Consider now what you need to secure in plants for Winter forcing.

Plan where to store Canna, Dahlia and like roots for Winter storage.

Have you a building ready for cold storage of Winter stock?

Make a list of trees and shrubs that hold their foliage late. It is often useful when planting.

Native ferns from woods should be secured before their foliage decays.

October

Continue noting handsomely foliaged trees in Autumn.

Label fruiting Hollies while berries are visible.

Collect forest leaves for covering plants for Winter.

Sow acorns that sprout at once when reaching damp earth; White and Chestnut Oaks are examples.

Get compost under cover for Winter potting.

Pot a few Lespedeza, Caryopteris and other shrubs to force, to give young wood cuttings in Winter.

Acorns and all nuts may be safely over-wintered in a close building where they will not lose weight by drying. A little damp soil helps them.

Roots of Raspberries and like fruits may be dug and stored in a cool cellar for the making of root cuttings.

The transplanting of all stock should finish this month.

Give another good spraying to all stock.

Dig and heel in all layers not intended to remain undisturbed for two seasons. If wanted in Winter fix them to permit getting at them.

It is time to place orders for Hollies and all else desired for Christmas sales.

Get under cover all shrubs and plants desired for Winter forcing.

Sow at once all tree seeds; coniferous ones may be kept dry and sown in Spring.

Make note of trees and shrubs with lovely Autumn foliage, as well as others holding foliage late.

Walnuts, Chestnuts and other nuts may be kept in damp soil and sown in Spring.

November

Place a thick covering of leaves or other material at the base of Rhododendrons; should ground be dry, give thorough watering first.

Acorns, mixed with damp soil, do very well sown in Spring.

Subsoiling ground is a great aid to fertility. It can often be done this month.

Heavy snow often ruins evergreens; place a strand or two of rope around them now, not drawn too tightly.

Circulate lists of plants for Christmas sales.

If any seeds have been overlooked, sow them now, even if freezings have started.

Hard out and spread manure; it is better spread than left in heaps.

Cut down and mulch herbaceous plants; strawy manure is excellent for covering.

Fill cold storage houses with stock for early shipments.

Many a choice shrub would over-winter better if a thick mulch kept frost out.

Look up stray tools and have all housed in proper places.

Root pruning of trees can often be done to advantage this month.

Don't tie up evergreens so tightly as to exclude air. Protecting from the sun is the main object. Lack of air kills many.

Root out some crooked trees, but not all; a planting of trees, all straight-trunked does not constitute beauty.

Many tree, shrub and vine seeds can be sown under glass this month, often to better advantage than when sown outdoors.

A Packing Machine Ready for the Trees

Plantings of small evergreens and other stock are often bettered by a thorough watering before Winter sets in.

December

Prevent snow damage to evergreens by passing strands of string around them. It secures safety, at little cost.

Seeds for Spring sowing keep in air-tight cases.

Evergreen cuttings are best made this month.

Revise record of stock on hand, preparing for the coming year.

Make a list of indoor work for unfavorable days outside.

Broad-leaved evergreens dislike sun in Winter. Shade them in some way.

Grafting fruit and other stocks indoors commences this month; then heel them in in cool cellars in damp sand.

Bundle of Trees Tightly Packed

Cut shoots of trees and shrubs, placing them under cover to be made into cuttings for Spring planting.

Subsoiling is profitable work. It can often be done in mild Winters.

Advertise early the plants, etc., you will have for Christmas sales.

Start list of trees, shrubs, etc., having ornamental features in Winter, white bark, red or yellow shoots, weeping trees, etc., such as attract at that season.

Cart out and spread manure in favorable weather; it is a good mulch for small stock.

Is everything in cold storage for early and for late shipments?

Have heat in buildings where men work when too cold for outdoor labor.

Scions for indoor grafting may be cut now, and heeled-in in sand in a cool cellar.

Overhaul boxes and packing material, to have all in proper condition for use.

Collect all debts and pay all bills, to start the coming year clear of these matters.

Scattering a Poisonous Bran Mash Over Grass Land to Destroy Grasshoppers

QUARANTINE REGULATIONS

The Federal Horticultural Board has issued a number of Service and Regulatory Announcements dealing with the following:

Mediterranean Fruit Fly and Melon Fly.
Potato Quarantine.
Instructions to Postmaster re Cotton Lint.
Imported Cotton.
Importation of Potatoes.
White Pine Blister Rust.
Importation of Nursery Stock.
Sweet Potatoes and Yams

An index to the Service and Regulatory Announcements 1915 was issued on June 10, 1916, also a revised list of countries which maintain nursery stock inspection. Each or all of these may be had upon application to the Federal Horticultural Board, U. S. Dept. of Agri., Washington, D. C.

FLOWERS

* * *

FOOD and raiment are for the body, but flowers! flowers are for both body and soul.

When my lips are palsied by great emotions —love, gladness, sorrow, death—and the words I would write come not, then I send soul-messengers—flowers.

When I look upon a rose, all nightmares of atheism vanish; when I inhale the rare perfume of violets, I bow to the Master Chemist; when my pencil tries to trace the graceful flutings of the morning-glory, or my brush match the exquisite color blendings of the humble pansy, I reverently acknowledge the High Hand of Art.

Some days, when I am in perfect attune with the Creator-God, I know I hear melodies, strangely sweet, amongst my flowers, and songs —songs like the morning stars must have sung together at the birth of Him—The Rose of Sharon.

Without flowers my body could live, but I know my soul would starve.

—WILL P. SNYDER

Section VII

Business Section

Strange though it may seem, a man may be ever so good a florist and yet fail to be a successful one. He may be busy as a bee and have a lot of helpers busy, sell the products of his greenhouse without any difficulty, and still not make any more than wages. To be successful, the grower, whether he be a big one, with acres of glass and a whole battery of boilers, or a little one, with a small house and a hot-air heating system, has got to be a business man. And he cannot be a business man unless he keeps books.

The big grower with the extensive establishment can employ an expert bookkeeper. The small grower cannot; not only that, he does not have time to keep a complicated set of books of his own. But he ought, by all means, to keep some kind of records which will show him "where he is at." It would be all right to map out for him a system of double entry, with means by which he can take stock carefully and allow for development and appreciation of his stock, but such a set of books would never be kept in the establishment of the average small grower.

Simple Bookkeeping

Principally, he wants to know how much money he has taken in and how much is coming to him; how much he is paying out to run his business and how much it costs him to produce his flowers. Much depends upon how accurately he figures out this last item. The man with the big establishment may open an account with each section of his establishment and charge each bench with the labor, etc., expended on it, thus determining whether, when he gets three cents for each Carnation bloom, he is getting enough or not. The small grower could not make such extensive record-keeping pay. Yet he must have a way to determine whether he is producing at a cost sufficiently under the selling price to insure a profit on any one or all varieties.

If he sells in a non-competitive market he must know how to price his retail goods. If he sells in a competitive market he must be sure he is producing at a cost which allows a reasonable profit. He also must be able to compare all the entries on the debit side of the business with all those on the credit side, to know whether he is coming out ahead, or whether he is gradually working himself out of a business. Some system of records that will mean only one entry for each transaction is what the small grower needs. Some growers have worked out

this plan by grouping all receipts and bills receivable against all expenses and charges in the nature of interest, depreciation, etc. The difference at the end of a given period will show reasonably certain how much has been made or lost.

One grower keeps this record in a single book, the left-hand page showing the receipts and the right-hand page the expenses. Every time any money is received the entry is made, day by day, under date on the left-hand page; every time any money is paid out, the entry is made on the right-hand page. These columns are footed up daily, and the totals brought down at the end of every week. This keeps the account balanced and always opposite each other. It takes but a moment to make the entry in any case; it is done in lead pencil, and often when the grower's hands are wet. It is not the best-looking record in the world, but it keeps the grower informed of where he stands.

At the end of the month, when his bills go out, he adds these totals to the credit totals, on a separate slip of paper, adds the totals he has worked out as interest on his investment, depreciation, etc., to the total expenses, and he has a rough idea of whether he is running ahead or falling behind, and can be governed accordingly. Of course for the month when he pays his taxes or lays in his Winter's coal or makes some other heavy expenditure, the discrepancy is all on the debit side, but a rough mental calculation takes care of that.

This grower does not keep a ledger account of his debtors. A cash sale is so recorded in the journal, the only book he keeps. Charge accounts are kept on order blanks. The order blank itself is kept, stuck on a file until the end of the month. When it is a retail order, delivered to someone besides the purchaser, only one blank is filled in. When it is a direct-to-purchaser, wholesale or retail order, the order is always made in duplicate, the florist using a pad like that used in the dry goods stores. The carbon copy goes on the file. At the end of the month the file is cleaned off, the orders sorted and the bills itemized by date. A list of these bills with the amounts is made and the orders with delivery instructions are filed away in letter-cases until the bill is paid. Then the bill is checked off the list of bills receivable, the cash-received-entry is made in the journal, and the order-blank destroyed. Not much trouble, but systematic.

Stock Taking

This florist's year ends when many of the big corporations of the country end theirs, the fiscal year of the Government, on June 30. His greenhouse and his stocks are lowest then, and he can more easily take an inventory. His stocks, that is his growing plants, he values according to his estimate of the labor and materials used in bringing them to their present condition. Everything else can be assigned a real value, but the growing plants are assets, paid for in the charges of the previous year as far as they have developed. This way he reaches the value he places on his rooted cuttings, seedlings, etc. The difference between the total expenses for the year, plus the depreciation and interest charges, and the receipts and bills due him, added to the results shown by the inventory, show this grower—he allows himself a salary

of $25 a week and charges it up to expenses—what he is worth. Again, his total charges, divided by the bench area in square feet, show him what his greenhouse costs a year per square foot, and he can figure on that basis how much he ought to get per flower for Chrysanthemums which have occupied a certain number of square feet in the greenhouse for a given time. The figures for one year serve as a reasonable guide for the next. While this does not help him to get out on a disappointing lot of flowers, it does show him which he is growing with the most profit, and has led this grower to stop trying to raise certain varieties and concentrate on sure money-makers.

Here is a plan of bookkeeping that is simple in the extreme, and one which, while not scientifically accurate, is accurate in the results at the end of the year. The grower who uses it has found it practicable and easy, consuming only a moment at the end of each transaction or a few minutes before winding up for the day for transferring it to the permanent record. What this grower, whose case is a typical one, has done, every other small grower can do. Each will have to make some changes, perhaps, to suit the circumstances in his case, but in the main the plan is wide enough to cover all cases. It will show him, or help to, that the benefactor is not so much the man who makes two blades of grass grow where one grew before, but the man who grew the two blades in one blade's place and at the cost of one.

Marketing and Selling Stock

The Grower

The grower invests his capital in greenhouses. In these greenhouses he grows plants and flowers for cutting, for which, naturally, he desires to obtain the highest market prices. To accomplish this, he arranges to ship his flowers to a wholesale commission florist, who will sell these to the greatest advantage, and return to him the net proceeds.

Packing and Shipping

The flowers are cut, placed in vases of water and allowed to remain there long enough to drink their full, and then packed carefully either in paper or wooden boxes, usually the former, unless it is necessary to use ice. A slip is placed in each box, on which is stated the kind or kinds of flowers which the box contains, and the number of each kind, and if it contains several grades of the same kind or kinds, the number of each grade is given. Roses are graded according to a well-known fixed standard which is given in this Annual. The grading of other kinds of flowers is less exact. The address of the wholesale florist is written on the cover of the box, or on a label or tag, which is attached to the cover, also the name of the shipper, and usually such information and cautions as "cut flowers, perishable, rush; keep from frost and heat." These boxes of flowers are now sent to their destination by the safest, quickest, and most economical means of transportation, usually by express, and sometimes by special messenger, wagon or automobile.

Selling on Commission

Gems, gold, and some other metals depreciate very little in value through age, and the same is true in a much lesser degree of many other materials, and even articles of food retain their value for some considerable time. On the other hand, flowers usually begin to depreciate in value not many hours after they reach the commission merchants. Therein lies the difference between the wholesale commission flower business, and that in any other commodity. On account of the perishable nature of flowers, the successful conduct of a wholesale cut flower business calls for men of more than ordinary ability, judgment, and decision.

The wholesale commission florist receives a variety of flowers of several kinds from several growers. When the demand for flowers and the supply are well balanced, or the former is larger than the latter, it is a "seller's market," and the commission merchant usually obtains, not always the highest price he can, for that might repel future business, but the highest which he can reasonably demand. Selling under such conditions is not difficult. When, on the contrary, the supply is larger than the normal demand, it is a "buyer's market," and the wholesaler is obliged to sell to the retailers, who take advantage of this condition, at much lower prices than when the market is well balanced, or the supply short. Under such conditions a demand, for the surplus left after the buyer's normal requirements are satisfied, must be stimulated by concessions in prices by the wholesaler, who must now offer his perishable stock at such prices as will induce a sale, otherwise this surplus will be a total loss. This is a situation which requires of the seller great tact and judgment. In some cities wholesale commission florists have a large shipping business, which requires fresh flowers of good quality for which they obtain, for obvious reasons, prices higher than that paid by local retailers. The commission merchant returns to the growers, who ship flowers to him, a statement of sales every week, sometimes oftener, and a check for the proceeds, less the commission agreed upon, every two weeks, or more frequently.

Plant growers either sell their plants directly to retail florists, or wholesale plantsmen, or send them to the auction rooms to be sold on commission.

The Retailer

The retail florists usually buy flowers, at as low a price as they can, in sufficient numbers, firstly, to fill orders which they have already booked; secondly, for placing in their iceboxes for supplying the normal daily demand; thirdly, for a store and window display to attract business. Some retail florists buy heavily at low prices when there is a large surplus of flowers in the market, and take a chance of disposing of these at a profit. When retailers book very large orders for delivery on some future day, they usually arrange for the flowers for these orders in advance with the wholesalers.

There are, then, always four necessary factors which enter into the flower business, the growers, the wholesale commission florists, the retail florists, and the flower buying public.

Acknowledging Receipt of Orders

In offering rooted cuttings and plants for sale it is always understood that they are in good growing condition and up to the generally accepted standard of what the stock should be, otherwise it would be poor policy to advertise, for the sale of poor plants gives the advertiser an unenviable reputation and a black eye right from the beginning, so ruining his career. For that reason most men are careful to ship only good stock.

There are other vital points to be considered: An order should be acknowledged the same day as it is received; the date on which the goods are to be shipped should also be given. If cash is received with order, and for any reason that order cannot be filled the cash should be returned the same day with a notification that the stock ordered is out. There should be no substitution without permission.

On the manner in which the advertiser packs his orders depends much of his future success—an order improperly packed is a setback for the shipper; it provokes lasting dissatisfaction and has a tendency to curtail business. A careful packer, a man who has made a study of his material and knows just how to put it together so that it will carry safely and open out to look its best, has made a great advance toward securing future business; he is fairly started on the highway to success. (Notes on Packing appear in Section VIII.)

Advertising

It is said, and truly, that advertising is the dynamo of business, and that the persistent large advertiser can weather the hardest times and continue when others fail. The smaller man is apt to say that it is only the large firms that can afford to advertise; there are many articles in this Annual that disprove this. You can begin on your own letterheads; you can take care to keep your name and business prominently before your local circle and increase that circle by exhibits at flower shows, not necessarily large, but good; by having neat show windows; giving the best service, introducing new ideas, in short, exercise insight and decision, as well as intelligence in promoting your business enterprises. But much newspaper advertising even can be accomplished at little expense in the trade organs, and at not very heavy expense in the large daily or weekly newspapers, especially where co-operative advertising is employed. The advertising managers of these papers will always be glad to come and talk to a body of florists who desire information as to the best means of advertising on a given occasion, or for a certain event. This co-operative advertising is on the increase. The retailer and wholesaler can often adopt a neat folder with illustrations, drawing attention to his choicer lines of stock, and his desire to be of service on special holiday occasions or at weddings and other events. For the nurseryman and seedsman, beside these various forms of advertising, there is the catalog which is their most important means of advertising undoubtedly. Much skill, pains, knowledge and money is expended yearly in improving these catalogs. Nowadays illustrations play an important part in most of the lists, although others have gone to the other extreme and dropped them entirely.

Importing and Exporting

It is but little exporting that is done by the florists or nurserymen of this country, but a large amount of importing is done. Probably, for all except those who regularly undertake the work, the best way is to import through a broker whose experience is invaluable and who can furnish the exporter on the other side with full instructions as to the proper methods of packing, etc. Any one contemplating the importation of stock can make application to the Federal Horticultural Board at Washington, D. C., for a permit, and that board will supply much information in regard to the processes and requirements. There are several forms to be filled and certificates to be obtained, but in the case of limited importations it is, as said, perhaps best to handle through a broker or leave the matter to the regular importers. It is well to observe that no stock, even of small quantities of bulbs or roots, is allowed through the mails. This must be forwarded by express so that all imports can be examined at the port of entry. Any diseased or insect-infested stock that cannot be cleaned by disinfection or treatment, is refused entry. But seeds may come through the mails. For much fuller particulars in regard to importing and exporting see pages 75 to 78 G. and F. Annual 1915.

Insurance

Fire insurance on greenhouses can usually be secured through local agents or brokers. In States where rating bureaus prevail, or in which rating laws are in force, very frequently a reduction in general rate can be secured on modern-built greenhouses, by applying for a specific rate, in which any steps taken to prevent fire are taken into consideration. Insurance on greenhouse stock is more difficult to secure, and the rate is usually exorbitant.

Windstorm and tornado insurance on greenhouses is not written, with the exception of an agency in Chicago, managed by Florian D. Wallace, which accepts such insurance in certain localities.

Insurance against hail is written by the Florists' Hail Association of America at a rate based on the actual average cost of insurance for the preceding 10 years. The rate was 20 cents per 100 sq. ft. on single thick glass and 8 cents per 100 on double thick glass. An insurance company in Lancaster, Pa., accepts local hail insurance and a mutual company in Indiana also insures glass against hail.

For years the regular line fire insurance companies have looked upon greenhouse insurance with distrustful eyes and, from motives not thoroughly understood, they quote a higher rate than we believe is called for or justified. The impression prevails that the fire losses in growing establishments are very heavy and out of all proportion to the premiums paid. This reasoning we consider fallacious. The fact of the case is that the rate is so uniformly high that the greenhouse owner prefers to take his own risk rather than pay the exorbitant rate demanded. Consequently the companies which grant greenhouse

insurance, not being able to earn sufficient premium income, due to the large number of non-insurers, claim to be heavy losers. This biased view naturally affects the rate.

As to life and household insurance, that does not call for treatment or discussion here.

Principles of Banking

The method of analyzing the solidity of a bank is too long to be attempted in this brief article but it is sufficient to say in comparing two banks with the idea of opening relations, the fact of a large capital stock, surplus fund and deposits should not always be the determining factor, for a bank may be the largest in the world, yet the assets may be invested in such a manner as to make it an absolutely unsafe place for the deposit of money. The small bank just around the corner from the large one may be a great deal safer place in which to place one's money, for the reason that the officers and directors have invested the bank's funds carefully and wisely, which will insure every depositor receiving dollar for dollar upon request.

One way in which a layman may determine regarding the method in which the bank's funds have been invested is to analyze the Board of Directors. Are they men who are well known in the community? Have they built up a successful business of their own? If they possess money, was it through their own efforts, or did they receive it as a legacy? Are they men who are known to live well within their means or are they known to be extravagant? Are they men who are known to have shown poor judgment in their personal investments? Furthermore, are the officers of the bank giving their full attention to the banking business, or are they more interested in some outside enterprise?

In opening a bank account, it will be necessary to leave one or more copies of signature with the bank in order that all checks signed by you may be compared with the signature in order to determine their genuineness. After a paying teller has become familiar with a customer's signature and its peculiarities, the card is not referred to by him except in doubtful cases. Too much care cannot be used in signing checks in accordance with the signature left with the bank, without any deviation. For instance, if a man should open his account at the bank as Charles H. Jones and record his signature as such, the bank would have a perfect right to return through the regular channel all checks received which that same customer may sign as C. H. Jones, or refuse payment of cash at the paying teller's window. It should be realized by a customer that the bank has to make good all losses resulting from payment of forged checks, and every assistance on the part of the customer should be rendered to avoid such a loss.

A check received by a business man in the regular course of business from one of his customers, when taken to the paying teller should bear the endorsement of the person to whom the check is drawn. If this person is not the one cashing the check at the paying teller's window, it is right that his or her name should be placed on the back of the instrument, as the bank is required to know who received the money on each and every check. Great care should be exercised by every person

maintaining a bank account to see that the amount of money intended to be drawn is recorded in plain figures in the proper location, as well as clearly written, for many checks falling into the hands of persons inclined to change the amount to a larger sum, have caused no end of trouble to the depositor, as well as the bank. If a mistake has been made in writing a check, it should not be erased or altered in any manner but should be destroyed and an entirely new check issued. Banks are not required to pay checks that are altered in any particular. The date on the check should also be given careful consideration and should never be changed after having once been written. The custom of paying bills by checks drawn for some future date is one which seriously reflects on a customer in his standing at the bank when it becomes known that this is done.

Another serious reflection on the credit of a man at his bank is shown when he "overdraws" his account. No bank is required to honor a check for a larger amount than the customer has on deposit. If it does so, it is at its own risk and a courtesy on the part of the bank to the customer. Another serious reflection is when one merchant will exchange checks with another merchant for the purpose of temporarily increasing his balance at the bank. This is known as "kiting" and will surely label the customer by the bank as undesirable. No check should ever be drawn against one's balance at the bank until the full amount is actually in the bank on deposit to the customer's credit.

In depositing money care should be exercised in placing one's name at the head of the deposit ticket to read as it was written when leaving the first signature. A deviation from this might cause the bank to place the amount to the credit of another customer of a similar name, thereby causing embarrassment on the part of the bank, as well as the customer later on. Care should also be exercised in listing on the deposit ticket, in accordance with the printed items, the proper amounts to be deposited opposite bills, specie, checks, etc. Each check should be recorded on the slip separately and a total made of the entire amount. The arrangement of the currency should be so that all bills of a similar denomination will be together, thus enabling the receiving teller to expedite the receiving and entering of the deposit. In this way a good impression is made upon the mind of the receiving teller who is only another important cog in the banking machine and one whose co-operation and goodwill should be enlisted. In fact every time a customer makes a good impression upon an officer or employee of the bank he is simply accumulating what is known as goodwill, and will be returned to the customer with interest very many times. Too much emphasis cannot be placed upon the necessity for a prompt cashing or deposit of checks received in the regular course of business. In the event of the failure of a bank on which you hold a check and which you have held for longer than 48 hours, the drawer is automatically released from payment. Therefore, the prompt cashing or depositing of checks should receive careful consideration.

In the event that a customer receives in the usual course of business a check which he deposits or cashes, or has cashed at his bank and it is subsequently lost in the mail, the bank has the right to request the customer to secure from the drawer a duplicate copy in order

that it may again be sent through the usual channels for payment. The person drawing the check is amply protected in that he first determines at his bank whether the original item has been received and, if not, places an order to have its payment stopped.

In payment of a bill of goods a "certified" check will oftentimes be demanded. This is simply to assure the person receiving the check that it was drawn against an actual credit at the bank, and is secured by the person drawing the check taking it to his bank and asking if they will certify the same, or in other words declare that it is genuine. As soon as a bank certifies a check, it charges the account of the customer with the amount of the check and assumes responsibility for its payment. The business of certifying checks is more common in large cities than smaller ones. A large city bank in delivering securities to a borrower, who has placed them as collateral against a loan, will demand a certified check to pay the loan before delivering over the securities.

The real function of a bank is not simply the receiving and paying of money but it is that of safely and wisely employing the money left in its charge in order that no economic loss may result. A merchant having need for funds in his business will approach his banker, stating his needs, and receive the desired loan or otherwise, to be determined by the circumstances of the case.

Great care should be exercised on the part of every borrower never to permit a loan to mature without having made a substantial payment or properly arranging for its extension. The paying of a loan at maturity is one of the best evidences to a banker that the customer is a man who fulfills his promises, and will materially assist in securing new loans when desired. Credit in its simplest terms is simply belief and everything that a merchant can do to cause his banker to *believe* in him will add just that much to his credit rating.

Letterheads, Billheads, Typewritten Letters

Do you know that printed stationery is a necessary part of your system of doing business? If you are one of the hundreds of old-fashioned florists who insist on writing their letters on any old paper, and making out their bills on blank forms, it will pay you to consider this seriously.

Printed letterheads do many things. First, they proclaim loudly from whom they come. The reader does not have to attempt to decipher the often obscure signature. Again, they give the correct name of the individual, firm or company, together with the correct post office and shipping address, one mistake in which may cost more than the expense of the printed stationery. Lastly, the effect on the recipient is marked. And it is one of the best forms of advertising, and the cost is negligible.

The same principle extends to envelopes, on which should be printed name and address, which frequently saves weeks of time in the case of mis-sent letters; billheads—for surely a debtor will be more impressed by a bill made on a clean form than one on a piece of wrapping paper; business cards; receipts, etc. Some simple forms of letter-

PHONE 1260

JOHN BROWN
Florist
000 WEST 28TH STREET

NEW YORK, ...

heads are given by way of illustration.

It will be noted that a correct letterhead will give the full name (and if business is being done under an assumed name, the proprietor's name might well be given), the post office address, and express and freight address if different from that for mail. These are the essentials. Additionally may be given the specialty of the business, and any details that will assist your correspondent in knowing who you are, what you are, and where you are. Nothing more than ordinary good printing is essential, although the use of an illustration or a trademark lifts your stationery just so much above the average.

WILLIAM ROE
PANSY SPECIALIST
P. O. BOX 16

PRINCETON, N. J., ...

For the envelope what is known as a corner-card is sufficient; just the name and address. This will serve for a return address if your correspondent cannot be reached.

We are all so familiar with bills that it is hardly necessary to give more than one example here of a form for billhead.

NEW YORK, ... 191

TO JOHN BROWN, DR.
Florist
000 WEST 28TH STREET

SOLD TO .....

TERMS: .....

The essentials are name, address, as well as name and address of the debtor, and convenient rules for enumerating items and extending figures.

Seedsmen should note particularly that in all letterheads and billheads the legal disclaimer must appear if they wish to avoid liability. This must be displayed prominently, and should also be placarded in the store. A good form of this disclaimer is given here:

DISCLAIMER: While we exercise the greatest care to have all seeds, bulbs, plants and shrubs, true to name, we can give no warranty, express or implied, as to description, quality, productiveness or any other matter of any seeds, bulbs and plants we send out, and we will not be in any way responsible for the crop. If the purchaser does not accept the goods on these terms and conditions, they are to be returned at once and the money that has been paid for same will be refunded.

"*Eastern*" time includes: New York, Boston, Philadelphia, Baltimore, Washington, Richmond, Norfolk, Charleston, Buffalo, Pittsburgh, Cleveland, Montreal, Quebec, Ottawa, Toronto, etc.

"*Central*," which is one hour slower than Eastern time, includes: Chicago, St. Louis, Minneapolis, St. Paul, Milwaukee, Kansas City, Omaha, Indianapolis, Cincinnati, Detroit, New Orleans, Memphis, Savannah, Pensacola, Winnipeg, etc.

Mail and Express Rates and Data

Domestic Rates of Postage

First Class Matter. Letters and other first class matter (except drop letters), three cents for each ounce or fraction of an ounce. Drop letters, two cents for each ounce or fraction of an ounce. A "drop" letter is one that is mailed for delivery from the post office at which it is posted or, in other words, which is addressed for local delivery by the post office at which it is mailed. For instance, the district of the New York, N. Y., Post Office embraces the Boroughs of Manhattan and the Bronx, also Pelham and Pelham Manor; all *letters* mailed within that district for delivery therein will be subject to the rate of two cents an ounce. There is no drop rate on any matter except letters.

Letters, addressed to other post offices in the United States (including Hawaii, Porto Rico and the Virgin Islands of the United States), the Possessions of the United States (Canal Zone, Philippines, Guam and Tutuila, Shanghai City (China), *U. S. Expeditionary Forces in Europe,* U. S. Naval Vessels, U. S. Naval Hospital at Yokohama, Japan, or any other destinations to which the domestic postage rates apply, also other first class matter addressed to any destination to which the domestic rates apply, will be subject to the rate of three cents an ounce.

Note.—All mail for the *U. S. Expeditionary Forces in Europe* is subject to domestic rates; *letters for such forces will be subject to the rate of three cents an ounce.*

Letters, addressed for delivery in the following-named foreign countries, will also be subject to the rate of three cents an ounce, instead of two cents an ounce as at present: Bahamas (including Fortune Island and Inagua), Canada, Cuba, Barbados, British Guiana, British Honduras, Dominican Republic, Dutch West Indies (including Aruba, Bonaire, Curacao, Saba, St. Eustatius and the Dutch part of St. Martin), England, Ireland, Scotland, Wales, Leeward Islands, Mexico, Newfoundland, New Zealand, Panama and Shanghai City (China).

Note.—The postage rate on *letters* for foreign countries other than those named in the preceding paragraph remains as at present, five cents for the first ounce or fraction thereof and three cents for each additional ounce or fraction thereof.

Postal cards, under the regulations governing first class mail, will be subject to two cents postage, regardless of whether they bear written, typewritten or printed messages. Postal cards are cards which are issued by the Government and sold by the Post Office Department. The one-cent postal cards, when addressed to the destinations named in the preceding paragraph, must have a one-cent postage stamp affixed to them in addition to the one-cent stamp which is printed on such cards. Printed postal cards, or those which bear no more writing (or typewriting) than is permitted on printed matter, are mailable to all *foreign countries* as "prints" for one cent each.

Post cards or private mailing cards, which include all cards not exceeding in size approximately 3 9-16 by 5 9-16 inches nor less than approximately 2 3-4 by 4 inches, will be subject to two cents postage each,

whether they bear written or printed matter. All cards bearing the words "post card" or "private mailing card," which are not within the size above set forth will be charged two cents postage each if in print, or the letter rate if wholly or partly in writing.

Printed Advertising Cards.—The rate of postage on printed advertising cards or cards containing printed circular matter, which do not bear the words "post card" or "private mailing card" and do not come within the size prescribed for post cards, is one cent for each two ounces or fraction thereof.

Printed post cards or private mailing cards, or any cards which conform to the conditions for "prints" in foreign mails, are mailable to all *foreign* countries as printed matter at the rate of one cent for each two ounces or fraction thereof.

Full Prepayment of Postage.—In all cases postage should be fully prepaid. Failure to prepay the proper amount of postage will delay the despatch and delivery of mail, cause confusion, annoyance and inconvenience and impose upon the postal service unneessary labor and expense.

Second Class Matter.—This class includes all printed newspapers and periodicals that have been "Entered as second class matter," under the act of March 3, 1879, and other acts, and are regularly issued at stated intervals as frequently as four times a year.

Rates of postage on second class newspapers, magazines, or periodicals, mailed by others than the publishers or news agents, were, at the time this Annual was put to press in December, *one cent for each four ounces or fraction thereof.* It should be observed that the rate it one cent for each four ounces, not one cent for each paper contained in the same wrapper. This rate applies only a when a complete copy is mailed. Parts of second class publications or partial or incomplete copies are *third class or fourth class matter.* Second class matter will be entitled to special delivery when special delivery stamps (or ten cents in ordinary stamps and the words "Special Delivery" placed on the wrapper) are affixed in addition to the regular postage. Under the provisions of the War Revenue Bill 1917, which, unless repealed, were to take effect July 1, 1918, the rates of postage would be raised ¼ cent per lb. for the first zone, increasing with each zone, also increasing annually until the fifth year.

Second class matter must be so wrapped that it may be easily examined. The sender's name and address may be written in them or on the wrapper, also the words "sample copy" when sent as such, or "marked copy" when it contains a marked item or article. Typographical errors in the text may be corrected, but any other writing subjects the matter to letter postage.

Third-Class Matter.—Mail matter of the third class includes printed matter on paper such as engravings, circulars in print (or by the mimeograph, hectograph, electric-pen, or similar process when at least twenty identical copies are mailed at *post-office windows* at one time), and other matter except books wholly in print, proof sheets, corrected proof sheets, and manuscript copy accompanying the same.

Books are fourth-class matter.

The rate on matter of this class is *one cent for each two ounces or fraction thereof.* Postage must be paid by stamps affixed, unless

300 or more identical pieces are mailed under special permit when the postage at that rate may be paid in money.

Manuscript unaccompanied by proof sheets is subject to the letter rate.

Third-class matter must admit of easy inspection, otherwise it will be charged letter rate on delivery. It must be fully prepaid, or it will not be despatched. New postage must be prepaid for forwarding to a new address or returning to senders.

The limit of weight is four pounds, but packages over four pounds may be sent by parcel post. It is entitled, like matter of the other classes, to special delivery when special delivery stamps are affixed in addition to the regular postage, or when ten cents in ordinary stamps are affixed in addition to the regular postage and the words "Special Delivery" are placed on the wrapper.

Upon matter of the third class, or upon the wrapper or envelope inclosing the same, or the tag or label attached thereto, the sender may write his own name, occupation, and residence or business address, preceded by the word "from," and may make marks other than by written words to call attention to any word or passage in the text, and may correct any typographical errors. There may be placed upon the blank leaves or cover of any book, or printed matter of the third class, a simple manuscript dedication or inscription not of the nature of a personal correspondence. Upon the wrapper or envelope of third-class matter, or the tag or label attached thereto, may be placed in writing or otherwise the words "Please do not open until Christmas" or words to that effect, and there may be printed any matter mailable as third class. Written designation of the contents such as "photo," "printed matter," is also permissible, but there must be left on the address side a space sufficient for a legible address, postmark and the necessary stamps.

Registration.—All domestic mail matter except fourth-class matter may be registered at the rate of *ten cents for each package* in addition to the regular rates of postage, to be fully prepaid by stamps. Each package must bear the name and address of the sender, and a receipt will be returned from the person to whom addressed, when indorsed "receipt desired," or words of similar import. Mail matter can be registered at all post-offices in the United States.

An indemnity—not to exceed $50 for any one registered piece, or the actual value of the piece, if it is less than $50—shall be paid for the injury or loss of first-class registered matter mailed at and addressed to a U. S. post-office, and an indemnity not to exceed $25 is paid for domestic third and fourth class matter. The limit of indemnity paid for registered articles lost in the International mails is 50 francs.

Domestic Money Orders.—Domestic money orders are issued by money order post-offices for any amount up to $100, at the following rates:

For sums not exceeding $2.50, 3 cents; over $2.50 to $5, 5 cents; over $5 to $10, 8 cents; over $10 to $20, 10 cents; over $20 to $30, 12 cents; over $30 to $40, 15 cents; over $40 to $50, 18 cents; over $50 to $60, 20 cents; over $60 to $75, 25 cents; over $75 to $100, 30 cents.

Stamped Envelopes—Embossed stamped envelopes and newspaper wrappers of several denominations, sizes and colors are kept on sale

at post-offices, singly or in quantities, at a small advance on the postage rate. Stamps cut from stamped envelopes are valueless, but postmasters are authorized to give good stamps for stamped envelopes or newspaper wrappers that may be spoiled in directing, if presented in a substantially whole condition.

See that every letter or package bears the full name and post-office address of the writer, in order to secure the return of the letter, if the person to whom it is directed cannot be found. A much larger portion of the undelivered letters could be returned if the names and addresses of the senders were always fully and plainly written or printed inside or on the envelopes.

Boxes to which the lids are nailed or screwed may be accepted for mailing at the fourth-class rates of postage, if, with reasonable effort, the lids can be removed for the purpose of permitting examination of the contents.

Seeds and other admissible articles, which are liable from their form or nature to loss or damage unless specifically protected, may be put up in sealed envelopes of material sufficiently transparent to show the contents clearly without opening.

Seeds of fruit, nursery stock, and all other plant products for propagation, may be mailed in accordance with the instructions of the Department of Agriculture as promulgated by Post-Office Department orders.

Parcels containing perishable articles must be marked "perishable." Articles likely to spoil within the time reasonably required for transportation and delivery must not be accepted for mailing.

The limit of weight of parcels of fourth-class mail for delivery within the first and second zones is now 50 pounds, and in the third, fourth, fifth, sixth, seventh and eighth zones 20 pounds.

The law prescribes that a package to be admitted to the parcel post shall not exceed eighty-four inches in combined length and girth. In measuring the length the greatest distance in a straight line between the two ends of the parcel shall be taken, while the girth is the actual measurement by a tape encircling the parcel at its thickest part.

A parcel not more than 3 feet 6 inches in length may measure as much as 3 feet 6 inches in girth, or around its thickest part. A shorter parcel may be thicker; thus, if it measures no more than 3 feet in length it may measure as much as 4 feet in girth, or around its thickest part. Measurements can be made by means of a seven-foot tape line. So much of the tape as is not used in measuring the length is the measure of the maximum girth permissible.

Mailing Catalogs

Under the new regulations catalogs weighing 8 ozs. or less are put through the mails at 2 ozs. for one cent, and can be mailed under the usual permit system. Catalogs over 8 ozs., which are books, will have to be zoned at pound rates. Courteous treatment is the invariable rule at our city post offices, and seedsmen, florists and nurserymen should apply for advice without hesitation. A thorough understanding, in advance, of the zoning system will help out mightily in the actual work of classification. When catalogs are mailed under the permit system in identical pieces and in quantities of 300 or over, it is a good idea

to have the permit form printed with the amount paid in blank. The postage paid can then be stamped in with rubber stamps indicating the postage to each zone; in this way there should be no loss of envelopes or wrappers.

Quite naturally every establishment producing catalogs in quantity will make efforts to bring these in just under 8 ozs., or just under one pound, as the case may be, for a catalog exceeding 8 oz. will be charged as one pound, while a catalog exceeding 16 oz. even by a hair's weight, will be charged as two pounds. Catalogs weighing in excess of one pound are exceptions in our line, but there are many which average between 8 ozs. and 16 ozs. Catalogs of 9 ozs. to 12 ozs. will cost considerably more to mail on the average. Catalogs just under one pound will be mailed at an advantage as to price up to the fourth zone. In the fifth zone the cost will be equal to the old rates, and in the sixth, seventh and eighth zones it will exceed the former cost. For instance, a book or catalog weighing 14 ozs. which used to be sent from New York to California for 7c. will be charged 12c., and should the weight exceed 16 ozs. by ever so little, instead of its costing 9c. to forward, it will cost 24c.

Parcel Post Rates

(*a*) Parcels weighing four ounces or less, except books, seeds, plants, etc., one cent for each ounce or fraction thereof, any distance. (*b*) Parcels weighing eight ounces or less containing books, seeds, cuttings, bulbs, roots, scions and plants, one cent for each two ounces or fraction thereof, regardless of distance. (*c*) Parcels weighing more than eight ounces containing books, seeds, plants, etc., parcels of miscellaneous printed matter weighing more than four pounds, and all other parcels of fourth-class matter weighing more than four ounces are chargeable, according to distance or zone, at the pound rates shown in the table, a fraction of a pound being considered a full pound.

Weight.	1st Zone.		2d Zone Rate. 50 to 150 Miles.	Weight.	1st Zone.		2d Zone Rate. 50 to 150 Miles.
	Local Rate.	Zone Rate, 50 Miles.			Local Rate.	Zone Rate, 50 Miles.	
1 lb.....	$0.05	$0.05	$0.05	11 lbs.....	$0.10	$0.15	$0.15
2 lbs.....	.06	.06	.06	12 lbs.....	.11	.16	.16
3 lbs.....	.06	.07	.07	13 lbs.....	.11	.17	.17
4 lbs.....	.07	.08	.08	14 lbs.....	.12	.18	.18
5 lbs.....	.07	.09	.09	15 lbs.....	.12	.19	.19
6 lbs.....	.08	.10	.10	16 lbs.....	.13	.20	.20
7 lbs.....	.08	.11	.11	17 lbs.....	.13	.21	.21
8 lbs.....	.09	.12	.12	18 lbs.....	.14	.22	22
9 lbs.....	.09	.13	.13	19 lbs.....	.14	.23	.23
10 lbs.....	.10	.14	.14	20 lbs.....	.15	.24	.24

Vegetables and fruits which do not decay quickly will be accepted for mailing to any zone if packed so as to prevent damage to other mail matter.

NOTE.—The rate for local delivery applies to all matter mailed at a city carrier office, or at any point within its delivery limits, for delivery by carriers from that office. The rate for local delivery applies also to all parcels mailed at a post-office from which a rural route starts, for delivery on such route, or mailed at any point on such route for delivery at any other point thereon, or at the office from which the route starts, or on any rural route starting therefrom, and on all matter mailed at any office for local delivery.

The rate of postage on parcels exceeding 4 oz. in weight, in the third, fourth, fifth and sixth zones is as follows:

Third zone—6c. for the first pound and 2c. for each additional pound or fraction thereof.

Fourth zone—7c. for the first pound and 4c. for each additional pound or fraction thereof.

Fifth zone—8c. for the first pound and 6c. for each additional pound or fraction thereof.

Sixth zone—9c. for the first pound and 8c. for each additional pound or fraction thereof.

Exceptions

Flower baskets, boxes or crates: weighing 15 lbs. or less, 10c. each; weighing over 15 lbs., 15c. each; refrigerator boxes, 25c. each. Growing plants in pots or tubs, plant and receptacle, crated, first class. In pots or tubs, not crated, double first class. To be refused when in pots or other receptacles completely boxed. Trees, Christmas, wrapped or bound, charged prepaid or guaranteed. Not exceeding 12ft. in length double first class. Exceeding 12ft. in length, subject to rule 18.

War Stamp Tax on Domestic Parcel Post

Effective Dec. 1, 1917, Parcels on which the postage amounts to 25c. or more are subject to a tax of one ent for each 25c. or fractional part thereof. This tax must be paid by the sender *by special internal-revenue stamps* affixed to the parcels; postage stamps are not valid for this purpose. The internal-revenue stamps must be canceled by the sender by placing or causing to be placed thereon his written or stamped initials, together with the date upon which the stamps are attached or used. In no case, however, should the sender cancel *postage stamps* affixed to parcels; such stamps must be canceled only by postal employees.

The War-Stamp Tax does not apply to parcels for foreign countries, nor to parcels for Porto Rico, the Philippines, Canal Zone, Virgin Islands of the United States, Guam, Tutuila and Manua, and other Islands of the Samoan group belonging to the United States, United States Naval Vessels and the United States Expeditionary Forces.

In determining the amount of postage on which the tax shall be based, the fees paid for special delivery and insurance or C. O. D. services shall not be counted. Internal-revenue stamps for use in paying the war tax are sold at the General Post Office and all stations. Parcels will not be accepted for mailing unless both the required postage and tax are fully prepaid.

Insurance

A parcel may be insured on payment of 3c. for not exceeding $5 in value; 5c. for not exceeding $25 in value; 10c. for not exceeding $50 in value; and 25c. for not exceeding $100 in value; to be prepaid by stamps. A receipt is given to sender of an insured parcel and a receipt from addressee will be returned if parcel is so marked. Insurance also ex-

tends to Alaska, the Canal Zone, Guam, Hawaii, Porto Rico, Pago Pago, Samoa, Tau, Shanghai and the Philippines.

The C. O. D. privilege applies to parcel post packages that are sent from a money order post office in the United States for delivery at another money order post office in the United States, Alaska, the Canal Zone, Guam, Hawaii, Porto Rico, Pago Pago, Samoa or Shanghai.

The C. O. D. fee is 10c. prepaid, in addition to the regular postage and the limit of collection is $100; this fee of 10c. also insures the package to a limit of $50. The sender receives a receipt. The C. O. D. payment is made by the post office direct to the sender by a postal money order, the fee for which order is paid for by the addressee, in addition to the amount of the C. O. D. The contents of the package cannot be examined before payment. C. O. D. packages may be forwarded to another address on additional payment of the regular postage on the package.

The rate of postage on parcels of seeds, cuttings, bulbs, roots, scions and plants, weighing eight ounces or less, is one cent for each two ounces or fraction thereof, regardless of distance; on parcels weighing more than eight ounces, the pound rates shown in the table apply.

Second-Class Matter by Express Carriers

The following are specified as second class express material:

Bulbs, cactus, Cape Jasmines, cuttings (except cut flowers); fertilizer and fertilizer material (dry and deodorized); greens, decorative, cut, in box, crates or baskets and packed so that they may be stowed with other freight and may be handled without extra care; Mushroom spawn; plants, dormant, not potted, securely packed; plants, growing, not in pots or tubs, placed in boxes, the sides and ends of which are as high or higher than the plants, and slats nailed over the top, completely protecting the plants, roots, scions, tubers. *Cut flowers are first class.*

TWELVE O'CLOCK NOON NEW YORK MEAN (EASTERN) TIME.

AS COMPARED WITH THE CLOCK IN THE FOLLOWING PLACES.

	H. M.		H. M.		H. M.
Amsterdam	5 16 p.m.	Edinburgh	4 43 p.m.	Port Moresby	3 0 a.m.
Auckland (N. Z.)	4 45 a.m.	The Hague	5 15 p.m.	Prague	5 54 p.m.
Berlin	5 50 p.m.	Hobart, Tasmania	2 45 a.m.	Quebec	0 11 p.m.
Bombay	9 47 p.m.	London, Eng.	4 56 p.m.	Rome	5 46 p.m.
Boston, Mass.	12 12 p.m.	Madrid	4 41 p.m.	Rotterdam	5 14 p.m.
Brisbane, Qnsl'd.	3 8 a.m.	Melbourne, Aus.	2 36 a.m.	San Francisco, Port.	8 48 a.m.
Brussels	5 13 p.m.	Moscow	7 26 p.m.	Stockholm	6 8 p.m.
Cairo	7 1 p.m.	Paris	5 5 p.m.	Suez	7 6 p.m.
Calcutta	10 49 p.m.	Pekin	0 52 a.m.	Sydney	3 1 a.m.
Cape Town	6 10 p.m.	Penzance	4 33 p.m.	Toronto	11 38 a.m.
Chicago	11 6 a.m.	Perth, W. Aus.	0 39 a.m.	Vancouver	8 34 a.m.
Constantinople	6 52 p.m.	Petrograd	6 57 p.m.	Vienna	6 1 p.m.
Dublin	4 31 p.m.				

Easter Sunday

A table showing the date of Easter Sunday in each year.

1918—March 31.	1924—April 20.	1929—March 31.
1919—April 20.	1925—April 12.	1930—April 20.
1920—April 4.	1926—April 4.	1931—April 5.
1921—March 27.	1927—April 17.	1932—March 27
1922—April 16.	1928—April 8.	1933—April 16.
1923—April 1.		

State Flowers and State Nicknames

The following are "State Flowers" (in italics), (as adopted in most instances by the vote of the public school scholars of the respective States), and the nicknames of the various States (in roman):

Alabama, *Golden Rod*†; Cotton State.
Alaska, *Forgetmenot.*
Arizona, Saguaro.
Arkansas, *Apple Blossom;* Bear, Toothpick State.
California, *Golden Poppy;* Golden State, Golden Gate, Eureka.
Colorado, *Columbine;* Centennial, Silver State.
Connecticut, *Mountain Laurel;* Freestone, Nutmeg State, Land of Steady Habits.
Delaware, *Peach Blossom;* Diamond State, Blue Hen, Blue Chicken, Garden, Uncle Sam's Pocket Handkerchief.
District of Columbia, *Nasturtium.*
Florida, *Orange Blossom*;* Peninsula, Everglade, Yazoo, Orange, Flowery State.
Georgia, *Cherokee Rose;* Cracker State, Empire of the South.
Idaho, *Syringa;* Gem of the Mountains.
Illinois, the native *Violet;* Prairie State, Sucker State.
Indiana, *Carnation;* Hoosier State.
Iowa, *Wild Rose;* Hawkeye State.
Kansas, *Sunflower;* Sunflower, Jayhawker State, Garden of the World.
Kentucky, *BlueGrass;* Blue Grass, Dark and Bloody, Corncracker State.
Louisiana, *Magnolia;* Creole, Pelican State.
Maine, *Pine Cone and Tassel*†*;* Lumber, Timber, Pinetree State, State of a Hundred Harbors.
Maryland, *Black-eyed Susan;* Old Line, Oriole, Monumental State.
Massachusetts‡; Bay State.
Michigan, *Apple Blossom;* Lake, Wolverine, Peninsula, Badger State.
Minnesota, *Moccasin;* Gopher, North Star State.
Mississippi, *Magnolia;* Bayou, Bowie Knife, Eagle State.
Missouri, *Golden Rod;* Fair Weather, Bullion, Iron, Pike State, Italy of the Mississippi Valley.
Montana, *Bitter Root*;* Stubtoe, Treasury Copper State.
Nebraska, *Golden Rod;* Planter, Black Water, Antelope State.
Nevada, *Sagebrush,* its shrub†; Silver, Sage, Sagebrush State.
New Hampshire‡; Granite, White Mountain State, Switzerland of America.
New Jersey‡; Jersey Blue, Garden, Blue Hen, Blue State, New Spain.
New Mexico, *Cactus;* Vermin State.
New York, *Rose;* Empire, Excelsior State.
North Carolina‡; Old North, Turpentine, Rip Van Winkle State.
North Dakota, *Wild Rose;* Fliker Tail State.
Ohio, *Scarlet Carnation;* Buckeye State.
Oklahoma, *Mistletoe;* Boomer State.
Oregon, *Oregon Grape;* Beaver, Pacific State.
Pennsylvania‡; Keystone, Wm. Penn, Iron, Oil State.
Rhode Island, *Violet;* Little Rhody, Plantation State.
South Carolina‡; Palmetto State.
South Dakota, *Anemone patens;* Singed Cat, Coyote State.
Tennessee‡; Big Bend, Volunteer, Lion's Den State.
Texas, *Blue Bonnet*†*;* Lone Star State.
Utah, *Sego Lily;* Mormon, Salt Lake State.
Vermont, *Red Clover;* Green Mountain State.
Washington, *Rhododendron;* Chinook, Evergreen Corner State.
West Virginia, *Rhododendron;* Panhandle State.
Wisconsin, *Violet;* Badger, Copper State.
Wyoming, *Blue Fringed Gentian;* Equality State.

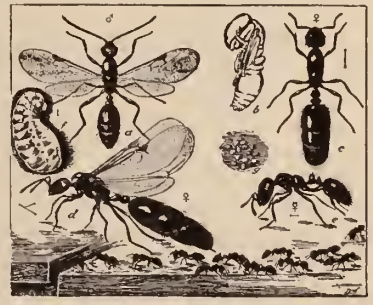
*Adopted by State legislatures, not by public school scholars. †Not adopted but generally accepted. ‡Scholars or State legislatures have not yet taken action.

Select Summer-flowering Sweet Peas

Loyalty, Hercules, King Manoel, Rosabelle, Geo. Herbert, Jean Ireland, Lady Evelyn Eyre, Royal Purple, Mrs. Hugh Dickson, Scarlet Emperor, President, Mrs. C. W. Breadmore, Lavender George Herbert, Dobbie's Cream, Margaret Atlee, Afterglow, R. F. Felton, Elfrida Pearson, Illuminator, Vermilion Flake (Burpee's), Charles Foster, Mrs. Cuthbertson, Clara Curtis, Agricola, Blue Picotee, Constance Hinton, Robert Sydenham, Edna May Improved, and Flora Norton Spencer.

Section VIII
Rules, Notes and Recipes

Ants, Destroying. — One good way of destroying ants is to get some old meaty bones—from the stock pot will do—and place them near the nest; these will attract them in large numbers, and they can then be dropped into boiling water. Another way, where there are no valuable plants near, is to sprinkle the nest and runs with a mixture of six parts water to one part kerosene. Forceful syringing with warm water will clean pot plants of ants; and stirring the soil around their nests repeatedly will also tend to clear them out. As a soil fumigant Vaporite is an excellent remedy. It is safe and easy to use, being already prepared. Bisulphide of carbon is likewise sure; and an article sold in England as the "Ballikinrain" ant destroyer is well spoken of.



The Little Black Ant (Monomorium minimum:) *a*, male; *b*, pupa; *c*, female; *d*, same with wings; *e*, worker; *f*, larva; *g*, eggs; group of workers in line of march below. All enlarged

Another method, suggested by the U. S. Dept. of Agriculture, is to make a syrup of one pound of sugar in one quart of water, and add 125 grains of arsenate of soda. This mixture, on cooling, after being boiled and strained, is used to moisten sponges placed within reach of the ants. The insects convey the syrup to their nests, poisoning the whole colony. Arsenate of soda, however, is poisonous to animals and human beings. Dick's ant trap, which sells for 50 cents retail, and can be recharged with ant poison, is said to be effective. Farmers' Bulletin 74, U. S. Dept. of Agriculture, goes thoroughly into the subject of ant eradication.

"White ants," or termites, cause considerable damage to wood products, as well as growing plants, especially in the South. Essentially wood destroyers, they live in nests in dead trees, foundation timbers of buildings, or similar wooden structures in contact with the ground. On account of their countless numbers and underground habits they are very difficult to eradicate once they become established. They prefer damp, moist places. Once established, the main object should be to prevent them from obtaining further access to the wood-

work from colonies in the ground, by replacing untreated timber and other basement woodwork with stone or concrete, or if not possible, replace timbers in contact with the ground by those impregnated with coal-tar creosote. Treat woodwork in greenhouses with a one per cent. solution of bichloride of mercury. To protect nursery stock, vineyards and greenhouse stock, use such precautions as clearing away dead and diseased wood, deep Fall ploughing, less use of stable manure, especially near the woodwork of buildings. Liquid carbon bisulphide is also effective in moist soil. In greenhouses the use of a five per cent. kerosene emulsion solution in the soil is recommended. The subject of termites is fully treated in Farmers' Bulletin 759, U. S. Dept. of Agriculture, Oct., 1916.

Arsenate of Lead (See Insecticides).

Aspect for Greenhouse.—A ¾ span house usually has the long span toward the south, and if toward the southeast still better results will be obtained. The majority of greenhouses run east and west, as they are thought to get more light in Winter this way; but with the larger types of modern houses the position is immaterial.

Aster Bug, to Destroy.—A good way to destroy the black Aster bug is to use fish oil soap, which can be bought in any of the large seed stores. Dissolve the contents as directed on the package and add Paris green to the mixture. The fish oil soap will tend to make the Paris green stick to the plants; no rain will wash it off, and it is the best medicine for any bug. The spraying should be done with an automatic sprayer.

Automobiles for Florists' Use.—More and more the automobile delivery vehicles are being employed by wholesale and retail florists in connection with their business. This subject was set out in some detail in the 1915 edition of this ANNUAL, and from the facts therein published the following is extracted: Small cars are best where small packages have to be delivered. If the transportation is of a mixed character medium sized cars may be employed. Where large packages or articles or plants have to be transported, large cars are of course necessary. The Lippard-Stewart car is used by some. It has carrying capacity of 2000 pounds, and can be run nine miles per gallon of gasoline. For loads up to 2 tons the Autocar is much employed, and can make deliveries of 40 miles from one's store at a comparatively low cost of maintenance. Penn of Boston calls this "the practical delivery car." The Pierce-Arrow and Packard cars are used by some of the nursery firms for their heavier class of work. Retail florists however, will find the medium and smaller types, particularly Ford cars, very useful, being inexpensive at the start and costing but little for their up-keep. As large trucks can usually be hired when wanted it is thought better to have several small vehicles than one or two large ones. Large bodies and small chassis are more practicable than small bodies and large chassis. A car should never be used for cut flower purposes if the engines are beneath the car; there is danger of heating. Provision should be made for protecting the driver in Winter and wet weather, and if heating is necessary, as it will be in the Winter, Lehman heaters may be used, or as in the case of the Wilcox cars, also

much used by florists, these are heated by coils behind the driver's seat, connected with the exhaust. Provision for interior lighting must also be considered. It is recommended that the maximum speed of light cars for florists' uses should be up to 25 miles per hour. A special space should be arranged for pot plants under the body of the car, to have a movable top. Plate glass sides are often or generally adopted. Many florists have their cars built to order.

Balled Shade and Ornamental Trees.—By the term "balled" we mean trees that have been lifted from the nursery rows with a ball of the earth in which they originally grew intact. The ball of earth containing the roots is then carefully wrapped in burlap and corded. Trees handled in this manner may generally be shipped and safely transplanted at unusual times—may be shipped with all the top and foliage, with every assurance that they will, we are assured, live and grow.

Basic Slag.—This is not a complete manure, consisting of nearly half lime, and about 18 per cent. of phosphoric acid. This, with the lime, constitutes its value. It also contains magnesia, and more than enough sulphate of iron. But it is destitute of potash; and when using (at the rate of 4 oz. to 8 oz. to the square yard, or 7 lb. per square rod) it should not be employed at the same time as sulphate of ammonia, as the two manures do not "agree." The sulphate should be employed a month or five weeks later. Basic slag is obtained as a powder, and should be dusted on the land carefully, as it is irritating, and even dangerous, to inhale it. It is a very cheap fertilizer, and should be used in all gardens for fruit, flowers, or vegetables. It is best for heavy land, and should be applied in Autumn, and hardly later than the middle of March if it is to be effective.

Birds, Some Useful.—Other notes on birds, especially their treatment in Winter, and on birds' nests appear in this edition. The following birds are, on the whole, useful to farmers and gardeners. Their habits and characteristics are treated of in Farmers' Bulletin 630 of the U. S. Dept. of Agri., which may be consulted: Bluebird, robin, titmouse, wren, brown thrasher, catbird, swallow, towhee, sparrow, house finch, grackle, brewer blackbird, Baltimore oriole, Bullock oriole, meadowlark, red winged blackbird, bobolink, crow, blue jay, Pacific Coast jay, phœbe, kingbird, nighthawk, woodpecker, cuckoo.

Bacterized Peat or Humogen.—Much has been claimed for this substance, and it is a little disappointing to find that some tests gave negative results. This bacterized peat is sent out in two forms: (1) fibrous material to incorporate with the soil; (2) a powder for top dressing. The powder was applied to Wheat and also to Clover hay at the rate of 7 cwt. per acre, but "produced no result whatever on either crop." The fiber was tried on Potatoes, being put in ridges before planting uncut sets. A plot in which bacterized peat to the extent of 5 cwt. per acre was used gave a smaller yield than that to which no artificial manure was applied. The best return was obtained from a standard dressing of artificials. Half of this standard dressing, with

the addition of 5 cwt. of bacterized peat, gave 2 tons 6 cwt. less, and omitting the nitrogen, viz., 1 cwt. sulphate of ammonia, and substituting 5 cwt. of the peat, resulted in a crop smaller by 2 tons 13½ cwt.

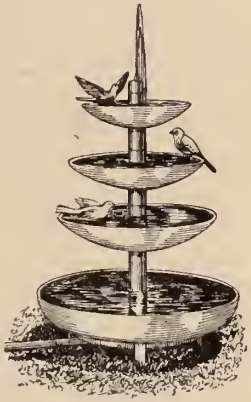
Berries for Birds.—Black and red Elderberries are probably the most valuable native fruit for attracting birds in Summer and Fall, especially in the West; in the North and East no Summer fruit is better liked than the wild Black Cherry (Prunus serotina), Choke Cherry (P. virginica) and the Pin Cherry (P. pennsylvanica). The extensive records of the subject show that the following varieties are most popular with the largest number of speices of birds: Elders (red and black) are eaten by 67 species; Rubus by 60; Mulberry by 48; Cornus (Dogwoods) by 47; Sumachs by 44; the various Wild Cherries by 39; Blueberries by 37; Wild Grapes by 29; Pokeberries by 26; Virginia Creeper, Bayberries and Juniper berries by 25 each; Holly berries (Ilex verticellata) by 19; Strawberries and Viburnum by 16; Hackberries and Huckleberries by 15; Thornapples by 12; Spice berries and Rose pips by 11; fruit of Aralia, Nyssa, Gooseberry and Currant by 10 species each.

Types of Bird Houses That Are Both Attractive and Suitable

Bird Houses.—Considerable interest has been shown in the care and encouragement of wild birds in recent times, so much so that various seed and nursery houses, as well as florists, have prepared various kinds of nesting boxes. One of the neat catalogs of these is published by Stumpp and Walter Co., New York, and the cuts illustrating these notes are loaned by this firm. The bird houses are in many different patterns, some quite plain and artificial, others more naturalistic looking, and they vary in size according to the style of bird it is desired to provide for. These houses are suitable for chicadees and wrens, and so arranged that they can be fastened to any place where they will be appropriate. They are of cedar, and will stand exposure better than any other type of bird house; should be placed from 6ft. to 15ft. above the ground. Larger openings are made for the bluebirds and smaller openings for wrens and chicadees.

Baskets, Standard Sizes for.—A bill was introduced into the House of Representatives by Congressman Charles F. Reavis of Nebraska (H. R. 16174) to fix standard sizes of baskets or other containers for small fruits, berries, vegetables, and other agricultural and horticultural products. The Reavis bill would make it unlawful for any person to manufacture, sell, or offer for sale baskets or other containers for the commodities named above for shipment in interstate commerce, filled or unfilled, which shall contain when even full less than one dry quart of 67.2 cubic inches; one pint, which shall contain when even full less than 33.6; one-half pint, which shall contain when even full less than 16.8 cubic inches, or multiples of the dry quart. The above prohibition is not intended to prevent manufacture of baskets and open containers of other than the sizes specified, when intended for export to any foreign country and manufactured according to specifications or directions of the foreign purchasers.

Beans, Weevily.—The Missouri College of Agriculture suggests that weevily Beans should not be planted, because the Beans usually fail to germinate. Those that germinate do not grow satisfactorily. A temperature of 145 deg. F. will kill the weevils in all stages of development, provided they are subjected to the heat for six hours. The heat does not injure the germination of the seed. They may be placed in an oven for this treatment. Or weevils may also be eliminated from seed by fumigation with carbon bisulphide. From one to three pounds are required for 100 bushels of seed or one ounce for 75 or 100 pounds of seed. The best method for treatment is to place the seed in a tight receptacle and pour the carbon bisulphide into an open dish on top of the seed. The fumes from the liquid will settle among the seed and kill the weevils. Allow the gas to act from 24 to 36 hours. The gas is highly explosive and consequenqtly must not be exposed to artificial light or fire.



Bird Basins

This suggests an idea for a small bird basin either for an aviary or for outdoors. Every garden should have a bird basin. (Cut loaned by Stumpp and Walter Co.)

Bordeaux Mixture (See Fungicides).

Bottoms for Benches.—Tiles made expressly for that purpose make a good and lasting bottom for benches, especially if laid on metal supports. They should be perforated or spaced in laying, or both, to allow for ample drainage. Slate is not as satisfactory as tiles for bench bottoms because the aëration and drainage are less perfect, and

the soil or sand on these becomes sour. If used, they should be laid in such a way as to secure sufficient drainage. Pecky Cypress, and also concrete perforated slabs, often made on the place, are much used.

Budding is a grafting operation wherein buds with a small portion of the bark attached are transferred from one shoot or branch of one plant to the shoot or branch of another, as is the case of Peaches, Roses, and other subjects. It is mostly performed in July and August and may be continued in September. In the South and Southern California, June budding is practised, or even in Spring, in which case the buds may start growth that year. From Peach seed sown in February, growth has been got sufficient to bud into in June. The bud has started, been pinched, and sold during the Autumn as a one year old tree. Or sowing may be done in April, the budding in August, and the stock cut down to above the bud in Spring, and allowed to grow on.

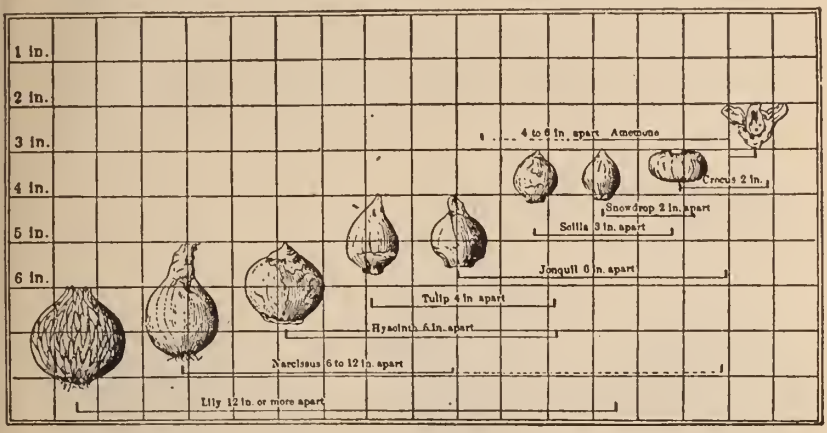
A Bulb Planter.—*The Scientific American* describes an ingenious device for insuring the planting of bulbs at the proper depth. If bulbs are set too deeply in the soil, development is poor, and if not planted deeply enough they appear too soon above the surface. The device consists of a stake with a handle, in which there are holes at intervals. In the latter are placed projecting pieces of wood on each of which is marked the name of the bulb to be planted at that depth. In using the stake is pushed down to the depth indicated by the slip of wood bearing the name of the kind of bulb being planted.

Bulbs in Cold Storage.—Speaking of keeping bulbs in cold storage, "Cold" says: "Lily of the Valley is commonly carried at 26 deg. to 28 deg. F.; in other words, they are carried in a frozen state. Such bulbs as Gladioli, Hyacinths, Tulips and Cannas should be stored at a somewhat higher temperature, and in case of Gladioli especially, we should recommend a temperature not lower than 34 deg. to 35 deg. F. Any of these products should not be stored in too large a bulk as they are inclined to collect moisture, causing mold and decay. Some sort of racks or trays are desirable."

Caustic Alkali Wash consists of ½ lb. of caustic soda (Greenbank's 98 per cent.), ½ lb. of crude commercial potash, 5 gals. of water, to be applied hot (say 180 deg.), using a force-pump with brass cylinder and a spray nozzle attachment. For Peaches and Apricots this formula should be altered to read 8 gals. of water. Pears, Apples, and Plums will stand the full strength. This wash will kill the eggs of almost any insect, and leaves the bark in a smooth, healthy condition.

Cubic Contents of a Ton of Coal.—There are no exact figures, as the number varies with the class of coal mined. The average, in soft coal, is from 42 cubic feet to 45 cubic feet to the ton, while that of anthracite would be about 35. A fairly accurate calculation can be made with hard coal as the variation is not so great. In buying coal it is usual for mine weights to govern in case of dispute.

Bulbs, Planting.—The following diagram shows approximately at what depth different bulbs may be planted in an ordinary or medium loam, and how far apart:



Cankerworms on Fruit Trees.—Spray infested trees as soon as the small caterpillars begin feeding. Six pounds of arsenate of lead paste or three pounds of arsenate of lead powder to 50 gallons of water is recommended. The tops of the trees should be well sprayed, since most of the egg clusters are deposited there.

Canning or Bottling Fruit.—Success in canning depends on thorough sterilization of jars and covers, using perfectly sound and fresh fruit and the best quality of granulated sugar. Large mouthed jars are recommended, buying new rubber rings each year. The Lightning and Economy jars are always satisfactory. Put jars in a pan of cold water and bring to boiling point while the fruit is being prepared. Throw all large fruit into cold water, as soon as pared, to prevent discoloration. For Peaches and Pears make a syrup of 1 lb. sugar and one quart water, for every 4 lbs. of fruit. For small fruits use ½ lb. of sugar for each 1 lb. of fruit, (Blackberries, ¼ lb.), and let stand two hours before cooking. Bring small fruits to boiling point. Put large fruits in boiling syrup and when easily pierced with a straw, they are done. Take jars out of boiling water, stand on folded towel, put fruit in jar through a wide mouthed funnel, fill to overflowing, run a spoon handle inside to break any air bubbles, fill again and seal quickly. Next day wipe jars, and then store in a cool dry place. Never lay any of your canning utensils down during the operation of canning, but keep them in a pan of boiling water. For jams, jellies and preserves use pound for pound. Always heat sugar before adding to strained juice, which should have boiled for forty minutes. Stir only long enough to dissolve sugar. Test for jelly when boiled three minutes.

Copper Sulphate (See Fungicides).

Carnation Stem Rot, or Branch-rot.—This very prevalent trouble is caused by Rhizoctonia fungus. There are two forms of the disease, called dry stem rot or branch rot, and wet stem rot. The trouble was first reported in 1895. The disease attacks the plant just where the plant enters the ground. One branch dies, followed by others. Plants with good long stems above ground are less susceptible. Be careful not to plant too deeply, nor to bury the plant deeper than where it begins branching. Diseased plants should be pulled up, and the ground around saturated with formaldehyde. The most critical

Examples of Root-knot (*See also under Eelworms*)

Primrose roots badly infested with gallworm. Greenhouse soils kept at a mild, even temperature furnish excellent conditions for the growth and rapid increase of this parasite.

Chrysanthemum, the roots of which are infested with gallworm. Plants severely attacked by this parasite are often dwarfed; they grow slowly and serve as breeding places for the nematode.

Carnation plant, the roots of which are much distorted and swollen as a result of gallworm infection. Many greenhouse plants are similarly attacked when grown in soil which has not been sterilized. (All Drawings furnished by N. A. Cobb.)

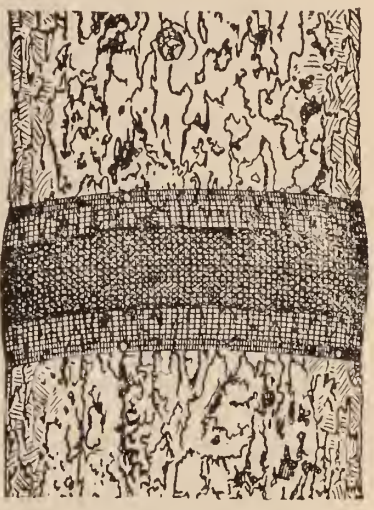
From Farmers' Bulletin 648, Dept. Agri.

time in the plants' history is usually when they are taken from the field to the benches. A high and moist temperature is very favorable to the disease. There is no absolute cure, but thoroughly healthy conditions and careful culture may and do prevent attack.

Carnation and Chrysanthemum Root-knot.—Illustrations of root-knot are given in the calendarial section. The trouble is caused by a minute eelworm, this being called Heterodera radicicola. The presence of this nematode cause an irritation so that the tissues swell into knots, which interfere with the passage of water. The best remedy is to sterilize the soil. An account appears in Farmers' Bulletin 648.

Compounding Manures.—Certain fertilizers ought not to be mixed, unless they are to be used immediately, owing to their chemical reaction, as, for instance, basic slag with superphosphate (also called acid phosphate); lime with super, soot, guano, sulphate of ammonia, basic slag, nor with any organic manures; nitrate of potash or nitrate of lime with superphosphate; sulphate of ammonia with lime, basic slag, or nitrate of soda. The latter should not be mixed with super, or with sulphate of ammonia. Those that may safely be mixed are nitrate of soda, with guanos, basic slag, or raw bones; basic slag with sulphate of potash, kainit, or bones; sulphate of ammonia with superphosphate, bones, or phosphatic guanos.

Cockroaches.—There are no fewer than 5000 recorded species of cockroaches; the domestic species, however, are few. As a rule they are not able to withstand cold, being mainly natives of warm countries. The roach is one of the most primitive and ancient of insects, and has been carried to all quarters of the globe. The damage roaches do is not only in the products consumed, but in soiling and rendering nauseous everything with which they come in contact, and they leave a nasty "roachy" odor. Normally they are scavengers in habit, and may be at times of actual service. It has been stated that they feed sometimes on caterpillars and other soft bodied insects, and in that case are of benefit to the gardener. Roaches are somewhat easy to control. The use of powdered borax put about in their runs is very effective, or one part borax to three parts finely powdered chocolate may be used. A dusting of commercial sodium fluorid is also employed, either pure or diluted, one-half with some inert substance such as powdered flower of gypsum. With the use of some dust gun or blower the sodium can be thoroughly dusted over the slabs, tables, floors, runways or hiding places of the roaches. Other powders such as pyrethrum and flowers of sulphur may be used, or sweetened flour paste, containing one to two per cent. of phosphorous, distributed on bits of paper or cardboard.



Codling Moth Trap

Codling Moth Trap.—One of these has been devised by E. H. Siegler, of the Bureau of Entomology, U. S. Dept. of Agriculture, to be used as a substitute for what is known as the "banding" method for destroying the codling moth. The banding method, in which a folded strip of burlap is wrapped around the tree trunk, demands a

considerable amount of labor, and the new trap is designed to minimize this.

The trap affords an attractive place for the larvæ to spin their cocoons, and it prevents the escape of the moths after they emerge from these. The trap, which consists of a burlap band covered by a strip of wire screen, is made as follows: Strips of burlap 6in. wide are folded into three thicknesses. The loose bark from the lower branches and trunk of the tree is removed and a strip of this burlap folded. To make sure that no moths may escape through openings along the edges of the trap or along the flap, a thin coating of pitch tar may be used. This material, when heated, may be applied readily with a brush. The traps may be placed on the tree at any time during the Winter or in the Spring not later than one month after the petals have dropped. As long as no openings occur in them they will require no further attention. The codling moth larvæ, having completed its feeding in the fruit, seeks a place to spin its cocoon, and for this purpose generally crawls up or down a tree trunk. Meeting the trap, it enters through one of the openings in the mesh of the wire screens and spins its cocoon beneath the burlap band. When it emerges as a moth its larger size makes it unable to escape through the opening in the screen by which it entered the trap. It must be clearly understood, however, that this trap is not a substitute for spraying.

Cut-Worm Moth Trap.—A remarkably effective method for destroying the cut-worm moth and other insect pests is being used in California. The arrangement consists of a high candle power electric light enclosed in a glass globe, directly below which is a pan about four feet in diameter, filled with oil. The moths are attracted to the light, strike against the glass, are stunned, and fall into the oil, from which there is no escape. As many as 7000 moths have been captured by a single light trap in one night.

Cutworms, Exterminating.—Dr. W. E. Britton, State Entomologist, New Haven, Connecticut, is author of the following notes: "Cutworms are the caterpillars or larvæ of certain moths, and have the habit of cutting off the stems of plants near the surface of the ground. Much injury is done by them to nearly all kinds of garden and field crops, and many inquiries are sent to the Station each year regarding remedies. Cutworms naturally feed during their growth, upon the roots of grass and other native plants and ordinarily are unnoticed. From the time the ground is plowed usually several days elapse before the plants appear, and during this time the worms are forced to go without food. The newly transplanted plants are therefore attacked and greatly damaged. The name cutworm is applied to the larvæ of special species of owlet or noctuid moths, all of which are somber-colored and fly at night. There is usually one brood each year, and the eggs are laid upon grasses during the latter part of Summer. One of the most satisfactory remedies is to distribute a poisoned, sweetened bran mash over the field, which may be prepared as follows: Bran, 5 lbs.; Paris green, 4 ozs.; lemon or orange, 1 fruit; molasses, 1 pint; water, 7 pints. Mix bran and Paris green together, dry. Squeeze juice of lemon into water and then cut pulp and peel into fine

pieces and add to water, then add molasses and stir. Add syrup to bran and mix thoroughly. The mash should be scattered over the field, just before dark, preferably a few days before the plants are set. A few plants in the garden may be protected by wrapping stems with paper. Cutworms may also be trapped by placing small pieces of board on the ground. They will crawl under these, and can then be hunted and killed. Late Fall plowing uncovers many cutworms, thus exposing them to birds and other natural enemies."

Diseases.—The ailments of plants are not all caused by fungus attacks, but may be owing to harmful insects, or faulty cultivation, such as overcrowding, irregular watering, poor soil, bad light, faulty ventilation, or damage by gas or fumes. A plant diseased is one in which fungous spores have germinated and have spread through the plant's tissues, either in the roots, stems or leaves, clogging them, and feeding on the sap. A healthy plant, well cared for, will usually resist fungus and insect attacks. Plants that are overfed or "coddled" too much often collapse from disease. The good cultivator seldom errs in these particulars. This work, however, is not a text-book on plant diseases, and the reader is referred to the special treatises on this subject, as Lipman's "Bacteria in Relation to Country Life," or Massee's "Diseases of Cultivated Plants"; or to the bulletins published by the Department of Agriculture and the State Experiment Stations. (See also paragraphs on "Fungicides" and "Insecticides" in this section.)

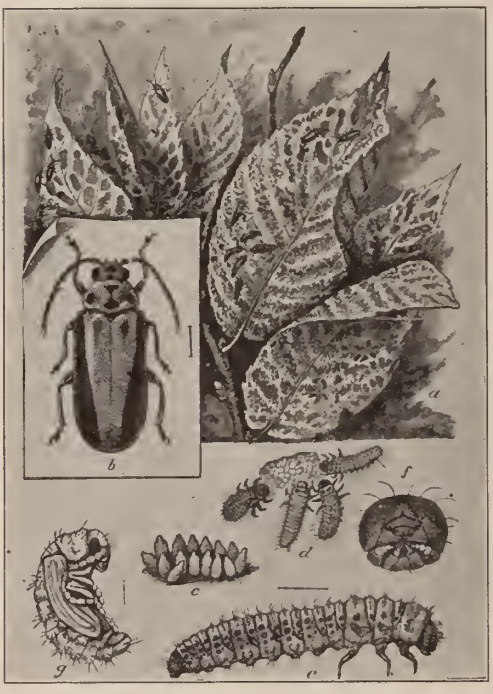
Drainage.—There are few places where some amount of drainage is not necessary. It may be merely the drainage around greenhouses to keep them dry and to prevent rot, or it may be the improvement in land, or proper drainage of benches. All land that holds water for a day or so after heavy rain requires drainage. The benefits derivable are the sweetening of the soil, making it accessible to roots to a much greater depth, freeing it of stagnant water, and allowing healthy action to take place. Tiles of 2½in. diameter, set from 2½ft. to 3½ft. deep, according to the stiffness or sogginess of the soil, are recommended; these to be 30ft. apart.

Dynamiting Soil.—If you have clay subsoil or hardpan and you want bumper crops you should use one-half stick of 40 per cent. red cross dynamite placed every 15ft. and 3ft. deep, and you will get them, if it is done at the proper time. It should be done in the Fall of the year and when the soil is dry. So conclusively has dynamite demonstrated its worth to the nurserymen that the Wharton Springs Nursery Company, of Tennessee, which has 217 acres devoted to nursery business, has stated, according to the *National Nurseryman,* that it will not plant any more nursery stock without first subsoiling the ground with dynamite. It has come to this conclusion after first setting out trees on about nineteen acres of land that had previously been blasted. The trees set out on this blasted area did the best of any ever grown there, and the company realized the worth of dynamite in the nursery. Fruit trees, shade trees, grapevines, as well as rose bushes, all are planted now in dynamited holes or on land subsoiled by dynamite.

Earwigs, Combating.—It is about three years since earwigs (Forficula auricularia) made their appearance in the Ochre Point dis-

trict at Newport, R. I., but they have since spread over a wide area. They are a terror to Dahlia lovers, as crawling up into the flower much damage is done before they are detected. Trapping seems to be the most effective way of getting rid of them. One gardener has found them by setting tumblers with just a little sweet oil (olive) along their runs in the greenhouse; placing a good sized label against the edge, the pests use this as a ladder and, on reaching the top, tumble in in large numbers. Inverted pots stuffed with hay at their base and placed upon stout sticks or stakes, form a harbor for them in the Summer when the plants are growing. The pots can be examined each day and the earwigs emptied into very hot water.

Eelworms (see also Root-knot, p. 174), attack many crops, particularly under glass, including bulbs, Carnations, etc. If a small piece of infected tissue be carefully torn to pieces with a needle in a dish containing a few drops of water, the white, thread-like adult eelworms, about one-fiftieth of an inch long, can be seen moving about in the liquid. The pest attacks not only the aerial parts of plants but also the bulb, causing the plant eventually to die, or if not killed it usually dies before maturity or fails to produce fruit. Remedies for the pest are the use of tuluol and bisulphide of carbon.



The Imported Elm Leaf-Beetle

a, Foliage of European Elm showing method of work of beetle and larva, half-size; *b*, adult beetle; *c*, egg mass; *d*, young larvæ; *e*, half-grown larva; *g*, pupa—all greatly enlarged; *f*, mouth parts of larva

Elm Leaf-Beetle.—This beetle has become very destructive to Elm trees in parts of the Eastern United States. It is an imported pest. The beetle passes the Winter in cracks or in out of the way places, issuing in the Spring, and as soon as the buds appear they begin to feed

upon the leaflets. The eggs are laid a little later, and the larvæ resulting from these also feed on the leaves. Spraying takes place just after the buds have burst, and the second spraying two weeks later; further sprayings may be necessary too. Arsenate of lead may be used, or kerosene emulsion.

Fence Posts, Durability of.—A survey made by the Ohio Experiment Station showed that Osage Orange posts last longest in the soil, while Yellow Locust and Red Cedar come next. Considerably below these in percentage of sound posts stood Mulberry; then White Cedar and Catalpa. Chestnut, Oak and Black Ash follow in the order named. Honey Locust, Sassafras, Black and White Walnuts and Elm posts were found inferior in durability. Posts from rapidly growing trees were found to decay quickly.

Fertilizers, Amounts to Use.—Where the amounts of the various fertilizers are mentioned per sq. yard or sq. rod, it is easy to estimate the requirements of any larger area. Thus ¾ oz. per sq. yard equals 1½ lbs. per sq. rod, pole, or perch, or 56 lbs. per rood (¼ of an acre). Likewise:

1½ oz. per square yard= 2¾ lbs. per square rod=112 lbs. per rood
2¼ oz. per square yard= 4¼ lbs. per square rod=168 lbs. per rood
3 oz. per square yard= 5½ lbs. per square rod=224 lbs. per rood
3¾ oz. per square yard= 7 lbs. per square rod=280 lbs. per rood
5⅝ oz. per square yard=10½ lbs. per square rod=420 lbs. per rood
7½ oz. per square yard=14 lbs. per square rod=560 lbs. per rood

Fiber.—There are several kinds of prepared fiber on the market for use in plant culture, for example A. T. Boddington's, also Jadoo fiber and others. Such fiber composts are clean to handle, sweet for use in dwelling rooms, and serve well in which to root softwooded cuttings, or in which to prick off seedlings or to pot or plant Holland bulbs. These fibers are hygienic and contain certain food supplies. Cocoanut fiber is much used for their propagating houses by growers as a medium in which to plunge their pots, or even in which to propagate some of their stock. Care should be taken to keep it free from fungus growth.

Floating Gardens of ancient Babylon were one of the wonders of the world. There are other hanging gardens not quite so wonderful but still very beautiful, away up high in the Himalayas, and some description of them appears in the *"Kew Guild Journal."* There are also certain floating gardens. It seems that vegetables, including Tomatoes, Melons, Cucumbers and Egg-plants are cultivated on floating rafts made of reeds and smaller water plants, roughly matted together, forming a foundation for a layer of soil in which the vegetables grow. The writer of the article says: "The gardens are tied to a pole to prevent them drifting about on the lake," but some were actually towed to new situations.

Ferns, Eradicating, from Pastures.—Hay-scented and Brake ferns in pastures are often a serious detriment to the grazing of live

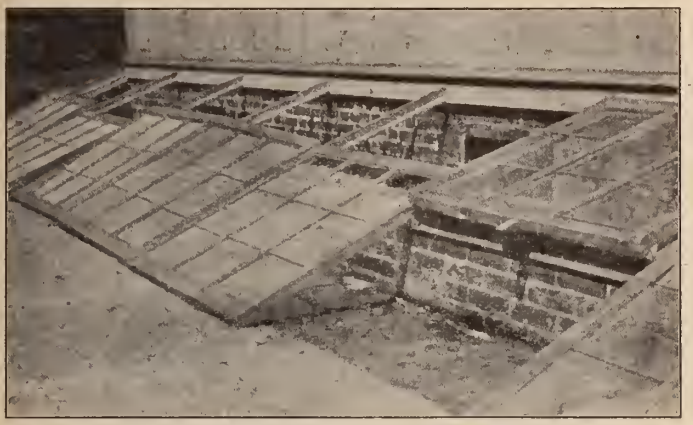
stock, and Farmers' Bulletin No. 687, U. S. Dept. of Agriculture, recommends methods of eradication. One method is to cut the fern with a scythe in the middle of June, just as the spores are beginning to mature, and again the middle of August, before the second crop of spores can spread, burning over as soon as the cut ferns are dry, to lessen the vitality of the root stock. The land may then be seeded with pasture grass and Clover. To improve the stand, add lime or lime with fertilizer. Another method is to spray the fern growth with salt solution, one pound of salt to one and one-half quarts of water, using a sprayer. Two sprayings, one about the middle of June and another the middle of August, are necessary, and the ferns, after drying, should be burned over. These methods were tried with Hay-scented fern, but it is believed that they would also be effective with Brake fern.

Flies in Houses.—The common house fly is now generally known to be a very dangerous insect, carrying disease germs far and wide. It commonly lays its eggs upon horse manure, but these may also be laid upon any kind of manure, or upon a great variety of decaying vegetable and animal material. An individual fly may lay 120 eggs at one time, and two to four batches may be laid. The eggs usually hatch in less than 24 hours, and the period of emergence of the adult fly is 8 to 12 days. In a few days the young female is ready to deposit eggs. There may be 10 to 12 generations every Summer, so that the number of flies that it is possible to mature will thus readily be estimated. The best preventive of all, of course, is *absolute cleanliness,* especially in regard to manure or decaying material. Stable yards are almost inevitable sources of flies. Other means are the use of sticky fly papers, fly traps, which are obtainable in various patterns, fumigants, and the burning of fresh pyrethrum powder. Another way is to expose in shallow dishes a mixture of formalin and milk or water, sweetened with a little sugar; one teaspoonful of commercial formalin to one teacupful of water or milk. Above all, however, cleanliness pays.

Forcing.—Forcing means the advancing of crops beyond their natural season, and is practised with flowering plants, vegetables and fruits. Any hothouse may be made a forcing house, or pits and frames may also be utilized, the heating being either by hot water, steam, or by the use of fermenting material such as horse manure and leaves. In the latter case two loads of the manure may be mixed with one of leaves, the latter tending to retain the heat for a longer period and maintain it steadily. In making a hotbed throw the fermenting material into a heap until it has become thoroughly heated, turn once or twice, then fill it into the trench or pit or frame. A depth of 2ft. to 3ft., well packed, is necessary to furnish heat in cold Spring weather for two or three weeks. By means of thermometers inserted in the soil which is above the hotbed, the degree of temperature can be ascertained and new material can be added around the outside of the frame. Such hotbeds are very valuable on small places for promoting growth at a critical time. Gentle forcing can also be done by means of hand frames, bell glasses or cloche. The new "Continuous Cloche" has been found very valuable, this being a continuous ridge of panes of glass laid over a growing crop out of doors to afford shelter and retain sun

heat. Boxes, large tiles or pots and barrels are also improvised as means of forcing, these being placed over the plants or subject to be forced, such as Rhubarb, Asparagus or Seakale and fermenting material heaped over and around them. A golden rule is never to force hard, i. e., overforce, if it can be avoided. Lilac, Lily of the Valley and ornamental shrubs can stand as hard forcing as most plants, but some of the bulbous subjects, as Darwin Tulips and varieties of Daffodils, go blind if forced hard.

Frames.—Garden frames are among the most useful adjuncts that



Frames Against a Warm Greenhouse

the grower can possess. They are invaluable for the man who owns a small establishment, and no truck grower or vegetable gardener could afford to be without them. Indeed, many a man makes his living from a yard full of frames, which can be used over hotbeds or simply as cold frames, and for growing on semi-hardy plants or for hardening off bedding plants. For these purposes they are handy and well suited. The illustration above shows a type of brick frame with sliding sashes built against a warm greenhouse, there being rectangular spaces under the greenhouse wall where the heat can come through to these pits, or a line of hot water pipes could be run in behind very simply. The making of cement frames has been treated of in previous editions of this Annual, notably the 1915 edition.

Fountains, Electric.—Little table fountains are much more frequently seen and used than formerly. They may be had in a large number of different forms and patterns, for the table, the stage, the platform, the vestibule, the lobby. They are self operating, the construction being extremely simple. Their operation consists of a specially constructed motor attached to a centrifugal pump; the latter placed in the interior of a basin. The pump gets the water directly from the

basin and conveys it through pipes to a multiplicity of nozzles, which direct a large number of small streams to the center. The water then flows down in the basin to be used over again by the pump. These basins of water can be placed out of sight under the table or in another part of the room, or beneath the floor. All that is necessary once the attachment is made, is simply to add the water and turn on the current.

Indoor Electric Fountain

The portable electric fountain embodies all the gorgeous effects and artistic beauties that the combination of colored glass, flowing water and electric light can produce, and the operating cost is put at one cent per hour. Filled with water they cool a room. Filled with a mild antiseptic, they sterilize the air. By evaporation the fountain furnishes the necessary moisture, gathers the floating dust in the air, and by perfuming the water, a delicious fragrance permeating the room is the result. The illustration on this page is lent to us by A. L. Randall Co., Chicago.

Garlic Killed by Spraying with Oil.—Fuel oil was found satisfactory by farmers in Hamilton County, Ohio, when used as

a spray against wild Garlic. Early Spring treatment before the Garlic forms heads is necessary in controlling the pest. Bulblets commence to form in the heads of the Garlic during April and May in Ohio; farmers find that spraying is effective only when done during a period of two to three weeks before the formation of heads.

Fungicides.—The sprays mentioned hereunder are for the combating of fungus affections (rather than insects), as mildew, scab, rusts and the like. The two fungicides that are chiefly used are Bordeaux mixture and potassium sulphide, and of these the first is the best. It is the most effectual all-round fungicide. Bordeaux Mixture is composed of sulphate of copper (bluestone) 1 lb.; lime 1 lb.; water 10 gallons. Dissolve the sulphate in a little hot water and the lime in a little cold water; when cooled, pour together into the 10 gallons of water. Stir thoroughly and apply with a fine sprayer or syringe. If it is to be kept for a short time, place it in an airtight wooden vessel. Being somewhat poisonous, fruits that are to be eaten should not be sprayed within a few weeks of being gathered. Caustic-Alkali Wash.—This wash is used for the cleansing of the bark of trees that are covered with lichen, scale, blight, or cryptogamic growth. Use: Caustic soda (70 per cent.) 1 lb.; potassium carbonate (80 per cent.) 1 lb.; soft soap 10 oz.; water 10 gallons. The soda and potassium are dissolved in water, and the soap in hot water, and all are then mixed, making up the water to 10 gallons. Potassium Sulphide.—This is used as a spray against mildews and rusts, as Gooseberry mildew, Carnation rust, etc.: Potassium sulphide (liver of sulphur) 3 oz.; water 10 gallons. Lime and Sulphur Spray.—For spraying over fruit trees in Winter against scale the lime and sulphur spray may be employed: Quicklime 20 lbs.: flowers of sulphur, 15 lbs.; water, 50 gallons. An iron copper is used for slaking the lime, which, when it begins to slake, has the sulphur added to it. Stir and boil together for from forty-five minutes to an hour, or until the sulphur is dissolved, then add water to the required amount and strain the mixture into a barrel. This strength can only be applied with safety when the trees are dormant. If possible, it is best applied warm. It kills scale and seals up the eggs of insect pests, also acts as a fungicide. Copper Sulphate—Sulphate of copper, 1 lb.; water, 25 gallons. In addition to these there are the well known proprietary articles—Fungine, Scaline and others.

Glass, Cleaning.—A successful method of cleaning the roof glass of greenhouses is adopted by Jos. Harris & Bro., Shamokin, Pa., who describe their method as follows: "We use a square tank, made acid-proof with wax, and mix five gallons of water with one quart of hydrofluoric acid until it is thoroughly mixed; this is then rubbed upon the glass, but very great care has to be exercised, for if the acid is too strong a frosty appearance will be given to the glass when it dries. We suggest, therefore, making tests with the acid water at various strengths, and never to proceed with the washing of the whole roof until such tests have been made and the glass has dried after the test. We also urge the necessity of using rubber gloves of the best quality. We purchase the acid at Powers-Weightman Rosengarten Co., Philadelphia, Pa."

Grass Seed for Polo and Football Grounds.—The best grass seed for polo and football grounds is that which will grow deep and produce a short top, such as Rhode Island Creeping Bent, Red Top, Kentucky Blue, Red Fescue, and Crested Dog's-tail. The quantity required per acre is 80 to 100 lbs. Clover could be added if desired, although it is not necessary, and bruises very easily.

Grasshoppers.—Occasionally, especially in the drier States, grasshoppers do considerable harm to the truck crops. The eggs are laid before freezing takes place, and these hatch about the time of the last Spring frosts. The young grasshoppers push upward to the surface and soon begin feeding on the nearest vegetation. Under favorable weather conditions they increase rapidly in size, and they can utilize a great variety of plants as food. Happily, the grasshoppers have innumerable natural enemies, the eggs and larvæ being eaten by beeflies and beetles; female wasps sting the young grasshoppers and use them for food; mice, squirrels, and other rodents, including moles, also take their toll, while toads, lizards and some snakes feed to a considerable extent on grasshoppers, likewise cats, birds and chickens; moreover, the chinch-bug fungus is known to kill large numbers. Control measures by man are deep plowing or digging, which should be finished as much before April 15 as possible; this covers the eggs too deeply for the young to get out. Secondly, harrowing, disking or scarifying the land, which breaks and crushes many capsules of the young and exposes others to enemies and disease. The most effective way of combating this pest, says the New York State Department of Agriculture, is through use of the so-called Kansas bait. This bait is composed of 20 pounds of bran, 1 pound of Paris green, 2 quarts of cheap syrup, 2 oranges or lemons and 3½ gallons of water. The bran and Paris green are mixed while dry, and those making the mixture are urged to wear a small sponge over the mouth and nose, to prevent the poison from entering the lungs. The fruit, syrup and water are mixed, the fruit being cut into small pieces or run through a food chopper. The whole is then mixed to form a mealy mash. This quantity of bait is sufficient to treat five acres of land. Nothing is to be gained by spreading the bait thickly over the ground but the whole aim is to secure

Typical Grasshopper (life size)

fine distribution. The best time of day to spread the bait is early in the morning and farmers are told to sow the bait in much the same manner as grass seed would be sown. Dead grasshoppers will be seen within a few hours after the bait is applied. Farmers are urged to treat roadsides of their farms first, together with fences along grain fields, new seedlings of Clover and grass lands. It is here that the most hoppers will be found, and if they can be destroyed before moving on the fields, losses will be much reduced. Because grasshoppers are small and apparently doing no damage is no reason for neglecting to use the bait as the small hoppers soon become devastating insects.

Army Worm

Grass Destroyed By Army Worm and White Grubs.—Grass and other herbage are sometimes seriously impaired or quite devoured by the army worm, which proceed absolutely in swarms across the ground. In 1915 there was a plague of this worm in several sections of the country. Spray strips of the grass or grain with lead arsenate to protect the fields that are not yet attacked. Or plow deep furrows across the line of march. Sprinkle the migrating worms with kerosene, and the use of a poisoned bran mash is also advised. The Fall army worm's attack is similar to that of the army worm but occurs in September instead of July.

White grubs are the larvæ of June beetles. They eat off the roots of grain, Corn, Strawberries, etc. Practice Fall plowing or deep digging to expose them.—*Bulletin* 183, *Connecticut Agricultural Experiment Station* to which we are indebted for other illustrations of and notes on insects.

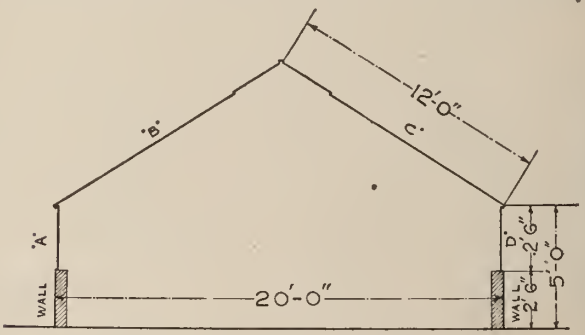
White Grub

Gum Water for Fastening Blooms.—Place 8 oz. of gum arabic in 5½ pts. of soft water and allow it to remain about two days to dissolve, then strain it through a piece of muslin, and use it from small cans such as ladies use to oil their sewing machines with. The gumming process can be done very quickly with these.

Grafting.—The most common forms of grafting are the whip and cleft, the first being employed in the case of young shoots, while the cleft grafting is employed in the case of older limbs. Grafting is mostly performed outdoors just before buds swell in the Springtime, when the sap is running, and when union is likely to take place quickly. The scions may be obtained previously when growth is quite dormant, and may be kept fresh in a cool store room, or out of doors, slightly protected. The chief thing to observe in grafting is that the outer surface of the stock and scion fit exactly along the cambium layer or growing portion near the edge of the shoot or limb; then the two are firmly bound round with raffia or soft twine, and waxed over, or covered around with a clay composition to exclude the air. Within a week or two growth should have started, and the union will be complete, then

the grafting wax or clay may be removed. Damp clay and fine straw mixed together so as to form a plastic compound, make a good medium for applying to the graft. Grafting wax is, however, handier and less troublesome, and is composed of wax mixed with pitch, resin and fat. Or resin, 4 parts by weight; beeswax, 2 parts by weight, tallow, one part by weight, melted and kneaded together. Indoor grafting of Roses (on imported Manetti stocks) is usually done in January, the stocks being potted up in December.

Greenhouse Measurement.—In order to find the surface area of any greenhouse add and multiply as shown in the diagram:



TO GET GLASS SURFACE { ADD A·B·C AND D TOGETHER THEN MULTIPLY BY LENGTH OF HOUSE

In order to find the cubical contents of a greenhouse multiply the length by the breadth by the height to the sill or gutter; then do the same from the sill to the ridge of the house but divide the sum of this latter computation by 2, when the result, added to the other total, will give you the cubical contents.

Hydrocyanic Acid Gas is a powerful fumigant. Growers availing themselves of this recipe are not only warned to use the greatest care in handling the cyanide of potassium (which in itself is a deadly poison), but to see to it that same is kept under lock and key until required; further, and most important, that the exact proportions prescribed be used, and that the condition of a dry house and a night temperature of not higher than 65 degrees be also present. For each 3000 cubic feet of greenhouse space use: 1¼ oz., 98 per cent. pure cyanide of potassium; 2½ oz. sulphuric acid; 3½ oz. water. Use a bowl-shaped, glazed earthen vessel in making the gas. When the house contains more than 3000 cubic feet, two earthen vessels should be employed, using, however, the cyanide, acid and water only in the same proportion to the cubic contents as directed above; for example, in a greenhouse containing 6000 cubic feet of space use two earthen vessels with 1¼ oz. of cyanide, 2½ oz. of acid and 3½ oz. of water in each; in a greenhouse containing 9000 cubic feet of space use three earthen vessels, with 1¼ oz. of cyanide, 2½ oz. of acid and 3½ oz. of water in each, and so on. Furthermore, it may be stated for convenience in using cyanide gas in greenhouses of different sizes where the space may not be exactly 3000 cubic feet or an exact multiple of that number, that the proportions to be used are ¼ oz. of cyanide, ½ oz. of acid and

about ¾ oz. of water to each 600 cubic feet of greenhouse space. Before fumigating, all the ventilators, doors and other apertures, large or small, in the greenhouse, should be closed, except the door by which the operator enters which, of course, should also be closed when he goes out; in short, the greenhouse should be made as nearly airtight as possible. It is well to arrange by a system of ropes and pulleys, or in some other way, so that the ventilators may be opened from the outside after the period of fumigation is over. When everything is ready, the operator enters. He first pours the required quantity of water into each of the earthen vessels; next, he pours slowly into each the required quantity of acid and, lastly, he turns into each vessel, quickly, the required portion of cyanide from small paper bags into each of which the required portion of cyanide for each vessel has been placed, beginning the depositing of the cyanide from the paper bags into the earthen vessel which is farthest away from the door. Get out of the greenhouse quickly after placing the cyanide into the vessels, since exposure to the gas, which will now be formed, would cause death in a few seconds; close and lock the door so that no one can enter. The gas should be used at night, in a dry greenhouse, which has not been watered that day, and when the night temperature is 65 deg. or preferably less. The gas may be left in the greenhouse all night. No one should enter the greenhouse next morning until after the ventilators or doors, or both, have been open one-half hour or more. The formula given in this article is used by one of the very largest plant growers in this country, who says: "We have used the 1¼ oz. 98 per cent, pure cyanide of potassium successfully on all of the plants we grow, including Roses, Carnations and bedding plants, with the exception of Asparagus plumosus. We would advise the user to experiment for himself where he wants to increase the 1¼ oz. amount." We may add that this grower is a very large producer of ferns, pot Roses, Crotons, Dracænas, Pandanus, Cyclamen, Hydrangeas, Azaleas, etc., and of bedding plants in large variety. This gas kills white fly, mealy bug, thrips, and various species of aphids in the greenhouse.

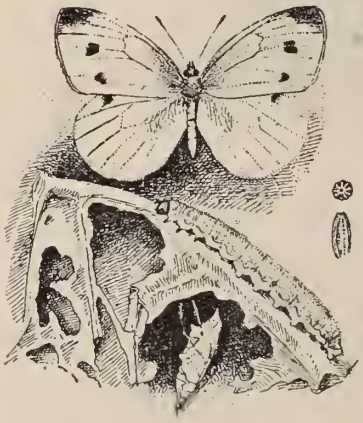
A Well-made Hotbed

Making Hotbeds.—Usually at about St. Patrick's Day, March 17, hotbeds are made in the latitude of New York or Boston. A first essential is a sufficient quantity of stable manure. This is kept in a heap

until it begins to steam. Keep the material turned to prevent it from "burning" or drying-out. It may require to be well wetted. Leaves from the woods are sometimes incorporated as these tend to equalize the heat and make it more lasting. A hotbed should have from 20in. to 2ft. of this manure, firmly packed or trodden, and extending a foot beyond the frame on all sides.

Insect Pests, Destructive.—On this and the succeeding, as well as other, pages of this Annual, notes and illustrations of those insects that are notably injurious to florist, nursery, and garden crops, are given. It would be hard to say which of these occasioned the greatest losses: they are all bad pests.

Insecticides.—As an "insecticide," or means for getting rid of aphis, rose bug and mealy bug on plants, hot water, used forcibly through a syringe or hose in the form of a fine spray at a temperature of 125 deg. Fahr., is certainly excellent. Hydrocyanic acid gas is also largely employed, and how to use this is explained in a preceding paragraph. Other insecticides can be made as follows: Quassia and Soap Wash. Formula.—Quassia chips, 1 lb.; soft soap, ½ lb.; water, 10 gallons. Preparation.—Boil the quassia chips in water for a couple of hours, then dissolve the soap in warm water, if possible, and mix the strained-off quassia extra with the soap. Another method of preparation consists of boiling the quassia with half the soap and half the water; strain off the liquid, and boil the residue for one hour with the rest of the soap and water; mix the two decoctions, and make up to 10 gallons of water. Uses.—For the destruction of all aphides and biting insects, and as a Summer wash. Time of Application.—As soon as the aphides hatch from their eggs or appear on the plants, if migrants. Arsenate of Lead (Poison). Dissolve the paste, according to directions, and stir well, and then add 1 lb. of treacle. This insecticide may be obtained as a paste, which is the most convenient form in which to use it. Uses.—It destroys all biting insects, such as caterpillars and beetles; especially beneficial against Codlin moth, brown-tail moth, gypsy moth, cut worms, tussock moth, slug-worm, etc. This wash may be mixed with Bordeaux mixture or paraffin. Time of application.—The first spraying should take place as soon as the buds show signs of bursting, and



Small White Cabbage Butterfly with larvæ and chrysalis

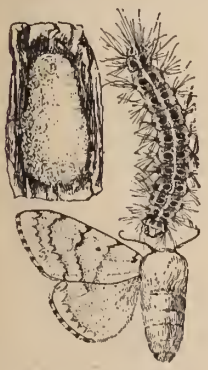
This is fully discussed in Department of Agriculture Bulletin, 766. Hand-picking or use of arsenicals are recommeded

again as soon as the blossom has fallen. Now and again a third or even fourth spraying may be necessary to kill caterpillars. It should be used as a fine spray, and the spraying should cease as soon as the leaves are seen to be dripping.

Kerosene Emulsion (Stock Solution, 66 Per Cent. Oil).—Is made after the following formula: Kerosene (coal oil, lamp oil), 2 gallons; fish oil or laundry soap (or 1 quart soft soap), ½ lb.; water, one gallon. First dissolve the soap in boiling water; then remove the vessel from the fire. Immediately add the kerosene, and thoroughly agitate the mixture until a creamy solution results. The stock emulsion may be more conveniently made by pouring the mixture into the tank of a spray pump and pumping the liquid through the nozzle back into the tank for some minutes. The stock solution, if well made, will keep for some months, and is to be diluted before use. To make a 10 per cent. spray (the strength for trees in foliage) add to each 1 gallon of the stock solution about 5 2-3 gallons of water. For 20 and 25 per cent. emulsions (for use on dormant trees and plants) use, respectively, about 2 1-3 and 1 2-3 gallons of water for each 1 gallon of stock emulsion. Agitate the mixture in all cases after adding the water. The preparation of the emulsion will be simplified by the use of a naphtha soap. No heat will be required, as the kerosene will combine.

The Bagworm
(Natural size)
Described in Farmers' Bull. 701. It is a bad pest as a tree defoliator. Hand-pick the bugs in Winter or spray against the attack of the larvæ in Summer.

Lime-Sulphur Wash.—One formula is: Stone lime, 20 lbs.; sulphur (flour or flowers), 15 lbs.; water to make 50 gallons. Heat in a cooking barrel or vessel about one-third of the total quantity of water required. When the water is hot add all the lime and at once add all the sulphur, which previously should have been made into a thick paste with water. After the lime has slaked, about another third of the water should be added, preferably hot, and the cooking should be continued for one hour, when the final dilution may be made, using either hot or cold water, as is most convenient. The boiling due to the slaking of the lime thoroughly mixes the ingredients at the start, but subsequent stirring is necessary if the wash is cooked by direct heat in kettles. If cooked by steam, no stirring will be necessary. After the wash has been prepared it must be well strained as it is being run into the spray tank. It may be cooked in large kettles, or preferably by steam in barrels or tanks. This wash should be applied promptly after preparation, since, as made by this formula, there is crystallization of the sulphur and hardening of the sediment upon cooling.



Gipsy Moth and Caterpillar and egg-cluster
Caterpillars defoliate trees in May and June. Spray with lead arsenate; band the trees

Liquid Manure.—To insure against loss of the urine of animals in stables, the barn floor should be tight and a trough impervious to water should be placed back of the animals. From this the liquid should be absorbed by means of a good litter, or led to a tank or cistern where it may be collected for future use. (See illustration page 96.)

Mosquitoes: Remedies and Preventives Against.—There are several forms or species of mosquito; certain of them breed only in tree holes, others in crabholes or sea beaches, certain others breed in marshes, while others seem to breed only in the pools formed by melting snow. One of the best means of abolishing mosquitoes is to screen all likely breeding places, and to drain marsh ground or fill in places where water collects. Disused wells in gardens are frequent sources of a mosquito supply; fountains and ornamental ponds also, and here the introduction of fish is usually all sufficient, as these eat the eggs and larvæ; even urns in cemeteries are breeding places for mosquitoes. As in most other things, cleanliness will be found to pay. Wherever there is a stagnant pool that cannot be drained or filled in, and is known to be a home of mosquitoes, spraying the surface with kerosene is advised. The heavier grades of oil will not spread readily, but will cling together in spots, and the coating will be unnecessarily thick. The rapidity of spread of the film is important. As to quantity: under still conditions an ounce of kerosene to 15 sq. ft. of surface water is about the right proportion, and in the absence of wind such a film may remain persistent for 10 days or slightly longer. The oil can be sprayed through an ordinary spray nozzle. Various larvicides are also used, especially in the South and in tropical countries. Smudges and fumigants are also employed to drive away mosquitoes.

Cut Worm, Showing how it breaks the plant

The burning of pyrethrum powder in rooms is a good practice, or dusting the powder into crevices frequented by the insects is performed. Sulphur, two pounds for each 1000 cubic feet of space is an efficient mosquito destroyer, where fumigation in the case of possible disease-bearing mosquitoes is desired. There are many remedies for mosquito bites, one of the most satisfactory being moist soap gently rubbed over the puncture. Others recommended are household ammonia, alcohol or glycerine.

Colorado Beetle on Potato plants. Use lead arsenate spray.

Mouse Trap.—Take an earthenware saucer, invert within it a flower pot, placing on the upper surface of the saucer some attractive strongly smelling bait, like roasted cheese or slightly burned oatmeal. Bank up some gravel or stones by the sides of the pot and place some straw over the drainage hole of the pot. The mice will readily enough find this aperture and when once in, are prisoners.

Apple Worm
Spray with lead arsenate as soon as blossoms fall.

Brown-Tail Moth
(Natural Size)
Fully described in Bull. 182, March, 1914, Conn. Agri. Exper. Stat. Burn Winter nests; spray when blossoms fall

Tent Caterpillar
Burn the egg-masses in Winter; remove nests; spray with arsenate

Mice-and dust-proof seed cases, bases and bins are made by various firms. Steel drawers when made of various sizes permit the use of the correct size just where it is needed, and being interchangeable permit of the stock being carried in alphabetical order.

Havoc by Mice and Rabbits.—Pine mice and cottontail rabbits occur throughout the eastern portion of the United States and do much harm to fruit and ornamental trees and shrubs as well as to garden produce and other farm crops. Both can be thinned out or cleared out by poisoning. For the Pine mice use Sweet Potatoes cut into pieces about the size of large Grapes. Moisten four quarts of these and drain off excess moisture. Slowly sift over them one-eighth ounce of powdered strychnine (alkaloid), using a pepper box or salt shaker for the purpose, and stir constantly to distribute the poison evenly. One or two pieces of the poisoned Sweet Potatoes should be dropped into the tunnels through the natural openings, or through

Canker Worms on Apple Foliage
Spray with arsenate; band the tree

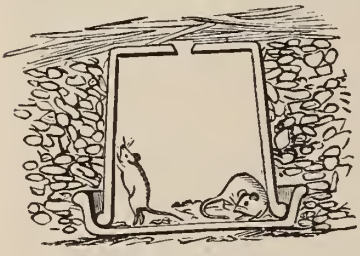
The Currant Worm
Devours foliage in May. Pick by hand, dust with hellebore or spray with arsenate

Corn Ear Worm
Hand-picking, or dusting with sulphur and powdered lead arsenate

Illustrations on this page are from Bull. 183, Conn. Agri. Exper. Sta.

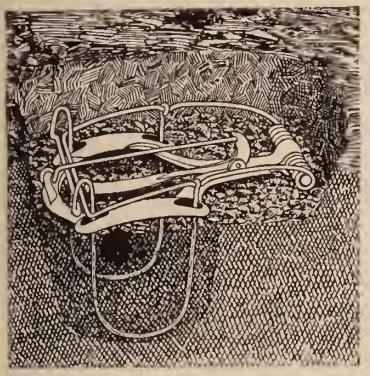
openings made with a stick. A systematic use of this poison invariably results in an almost complete extermination of Pine mice. These pests are also easily trapped, but owing to the extra time and labor required, this method does not compare favorably with poisoning. Rabbits can be exterminated by the use of powdered strychnine.

Moles, Eradicating.—One of the worst and most persistent pests in gardens, nurseries, lawns and sometimes in greenhouses, is the mole. There are several ways of trying to eradicate moles. First, and doubtless best, is the use of traps, either wooden or iron, which are in several patterns, those best known being the Out o' Sight, costing 75c. each; the Reddick, at $1; the Olmstead, $1.50; and the Nash mole trap, $1. The latter is used and recommended by the United States Agricultural Department. It is a light wire arrangement, and is highly spoken of. It acts upon the well-known principle of the Choker wire traps used for mice. The makers are H. A. Nash & Sons, Vicksburg, Mich.; but this and other traps may be had from seedsmen. It requires considerable skill to set a trap to the best advantage, and is an art not always readily acquired. Where moles are numerous in highly cultivated districts, a professional mole catcher is sometimes engaged. In gardens or nurseries it is well to set the trap at the edge of the grounds or lawn, as it is there that the moles usually enter. Among the other means of riddance are these: placing fish heads in their runs; placing pieces of poisoned meat there, or moth balls. Castor Beans (Ricinus communis) are also largely recommended, being placed at intervals of 20ft. apart or less. The Cornell University Experiment Station suggests trying the Caper Spurge (Euphorbia Lathyris). This plant is a native of Europe, but it has long been an inhabitant of old gardens in this country, and has run wild in some of the Eastern States; at the same time no seedsman or nurseryman appears to stock it. Poisoned fresh Corn, placed in their runs, is also recommended, a strychnine solution being used. Lastly, carbon bisulphide, which is a deadly poisonous volatile liquid, may be poured into their runs at places, covering the opening over again with the soil. The fumes permeate the soil and kill the moles. One can frequently catch or kill the moles as they work, by noticing the movement of the soil. The utmost caution has to be exercised, as they hear the slightest noise. A spade or digging fork may be used to scoop in behind them at about 6in. from where they are working, and not in front, as they always run backward. The Department of Agriculture, in Farmers' Bulletin, 583, 1914, suggested that a new minor industry might be established in this country by saving mole skins, as 3,000,000 skins were sold in this country in the years 1911, 1912 and 1913, none of which were American.



A Simple Mouse Trap
(*See notes on page 190*)

A mole trap can be successfully operated only when set on that part of a mole runway which is near the surface and has the soil raised into a distinct ridge, newly worked. Freshly broken soil usually indicates that the tunnel is in use. When in doubt, the operator may make a small break in the ridge and observe whether the mole repairs it within a few hours. Specific directions are given with the various traps for sale, but it should be remembered that in placing a trap one



Choker Loop Trap
From "Trapping Moles," Farmers' Bull. 832

Scissor-jaw or Gripping-jaw Trap

of the stretches of the runway that leads in a definite direction should be chosen, rather than one of the turns that may not be regularly traversed by the mole. Before setting the trap it is well to ascertain the course of the burrow by thrusting down a lead pencil, or similar stick. The trap selected should then be lined up with the course as nearly as possible; the jaws of the scissor-jaw type should straddle it, the loops of the choker type should encircle it and the spikes of the harpoon type be directly above it. In the case of the harpoon type, it is best to force the impaling spikes into the ground once or twice to facilitate their penetrating into the burrows when the trap is sprung. It is desirable, also, in setting any of the traps, to depress only that part of the ridge immediately under the trigger pan, using the hand instead of the foot for this purpose. Place a little earth or small chip under the pan, if necessary, and set the trigger catch as lightly as possible, avoiding stepping on any part of the runway near the trap. It will pay to visit the traps at least twice a day. As moles persistently repair breaks in their tunnels, they may often be surprised at work. A section of the runway may first be broken open or leveled and the place watched until the animal is seen moving the soil. Moles are sometimes trapped in empty glass jars, gallon size, which should be set along a main mole runway long in use. A narrow excavation, deep enough to receive the jar and allow its top to be somewhat below the bottom of the tunnel, should be made. Then the sod may be replaced

over the excavation so as to bridge without obstructing the entrance to the jar. The animal, in coming along the tunnel, falls into the jar and cannot climb out. Success depends much on the skill in placing the trap. Repeated leveling of mole ridges on a lawn with a roller tends not only to discourage the animals from making further incursions, but prevents the soil from drying out and thus injuring grass roots. Farmers' Bulletin 583, previously referred to, gives considerable information concerning the mole, its habits and methods of control.

Packing Plants.—In the case of flowering plants to be shipped to the retail florist, select stock that is at least 20 per cent. further retarded than stock that could be offered for sale on the home market. No plant should be packed for shipment that is in any degree dry. In the Spring, Summer and early Autumn, stock may be watered up to the time of packing and shipped successfully, but during the cold weather a very safe rule is to water all stock thoroughly the night before. In the case of palms, ferns and other green plants, first gather in the leaves and tie with some soft material, but do not injure or crush them. Flowering plants should be drawn in and tied by the woody part, and in the case of a Lilac or any other large or delicate flowering plants, care should be taken to have each flower covered with soft tissue or cotton. On a small flowering plant such as an Azalea, the head may be drawn in as a whole, and tied with a piece of twisted tissue. For the first wrapping next the plant, take two or three sheets of paper and one of tissue, keeping the tissue next to the plant to keep the foliage or flower from coming into direct contact with the rough paper. Start the wrapping of the plant at the bottom and work upward. Let your first wrapping cover the pot and be doubled under completely, taking in the pot. Always tie the bottom of the top sheet and the top of the next together with the same twine. Always be sure that in tying the paper around the top of the plant, enough room is left to insure the top not being pinched. The plant should be enveloped in three sheets of newspaper which should be added to in accordance with the weather. The selection of the crate is very important. Select a light strong case, and before packing go over it and see if it needs reinforcing at any point. Always select a case that will conveniently carry the stock. No buyer cares to pay expressage on wood and packing material for ten plants where only one is shipped. Give your crate a lining of newspaper, beginning at one end and going around, letting each set of sheets overlap the other and cover up the bottom as well. Next place in the bottom of the crate a sufficient amount of straw, hay or other packing material to form a perfect cushion. To insure against breaking them, begin to pack, keeping the weight distributed evenly over the crate; and at all times have sufficient material between each pot and the sides of the crate to take up the shock of handling. After your plants are all in the crate and packed in such a manner that they cannot move or shift, draw in all the top together and tie so that they cannot shift. Draw up the newspaper from the bottom of the crate and give the whole top an extra wrapping if the weather is cold enough to justify. Always crate your plants with a square top, as the express rates are lower for a crate on which another may be placed in travel. Leave sufficient space for the expressman to see that the crate must not be dumped upsidedown, and last but not least, when the crate

is finished be sure that there are enough handles on it to allow the expressmen to handle it with ease.

Paint Brushes, Care of.—To soften brushes get from your druggist one pint of benzole, not benzine; stand brushes in it a few minutes, then press up and down until soft; wash them first in turpentine, followed by warm water and soap.

Painting Heating Pipes.—Do not buy the dry lampblack, which comes in powder form, but that which is in paste form, and thin it with pure linseed oil until it is in paint form. The radiation of heat probably will be greater from pipes painted with this lampblack paint, than from those painted with white paint. Pipes may be made silver white, by painting with aluminum paint.

Petroleum Emulsion.—Make some moderately strong soapsuds and mix 7 oz. of oil with 8 gal. of soapsuds. It readily combines with the suds, and can be then applied uniformly with a syringe. It is a good thing for aphis, thrips, mealy bug, and may be used in dilution suited to the nature of the plants requiring treatment.

Photographing a Store Window.—It is generally very difficult to obtain a clear photograph of a shop window without reflection from whatever may be on the opposite side of the street. A successful photographer known to us selects a time when the traffic on the street is practically ended for the day—10 or 11 o'clock at night, for instance. The ordinary lights are then turned on inside the plate glass window and the artist proceeds to take his photograph exactly as he would any other subject. The remaining difficulty is the amount of exposure to be given, and this each photographer must judge for himself, according to the amount of light obtainable, diaphragm used, etc.

Peach Leaf Curl.—This disease is widely distributed and appears in May and June, causing the leaves to curl and usually to be discolored with tints of yellow and pink. These leaves fall and the tree produces a new crop of foliage, but if the disease is serious it is impossible for it to produce a second crop of leaves and a crop of fruit in the same season. When the disease reaches this stage it is impossible to do anything for its control. The trees must be sprayed with Bordeaux mixure before the buds open if the leaf curl is to be controlled.

Poison Ivy will not be killed by a single cutting, as new shoots or suckers are persistently sent up from the rootstocks. The rootstocks must be exhausted by destroying the foliage as fast as it appears, either by repeated mowing or by spraying with a strong salt brine made at the rate of three pounds of common salt per gallon of water. If the weed is cut or sprayed in June and the treatment repeated about three times at intervals of 10 days or two weeks, the rootstocks will become exhausted and die. Arsenate of soda (a violent poison), ¼ pound per gallon of water, or crude oil may be substituted for the salt spray. Spraying does not affect the roots directly, but is simply equivalent to cutting. However, there is the advantage that one need not come into actual contact with the plant.

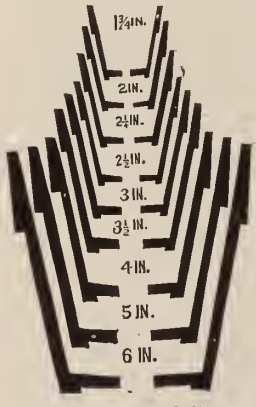
Pot-herbs.—Wild plants used as pot-herbs are Curly Dock, Pigweed or Lamb's Quarters, Chickweed, Mustard shoots, purple Milkweed

shoots, young Horse Radish leaves, Marsh Marigold (sometimes called American Cowslip), Poke Sprouts, Pepper Cress, Purslane or "pussley," and in the Southwestern States some sorts of cactus leaves and stalks. If the bitter or acrid flavor is too strong, as is frequently the case with Horse Radish leaves or Poke Sprouts, for example, it may be lessened by changing the water once or twice during cooking. Rightly cooked, all of the plants mentioned are harmless. Marsh Marigold is sometimes employed, also Water Cress, Pepper Cress, Nasturtium and the young leaves of Dandelion.

Potatoes, Treatment of for Scab and Rosette.—Soaking seed Potatoes for 1½ hours in a solution of 4 oz. of corrosive sublimate mixed in 30 gallons of water, or for 2 hours in a solution of 1 pint of 40 per cent. formaldehyde (formalin) mixed in 30 gallons of water will control scab and rosette diseases, according to specialists at the Ohio Experiment Station. The Potatoes should be soaked before cutting, and if not used soon afterward should be spread out to dry. Sacks or crates used for handling or storing treated Potatoes should be disinfected with the same solution. The corrosive sublimate is a deadly poison and should be kept from children and animals.

Potassium Sulphide (See Fungicides).

Pots, Standard Flower.—There is very little to be said regarding one of the most common articles about the greenhouse, namely, the plant pot. A standard flower pot is one in which the inside diameter at top, is the same dimension as its depth, the sides being made at a 78 deg. angle as adopted by the convention of the S. A. F. in 1890.



Standard Sizes of Flower Pots

The sizes run from 1 inch to 14 inches, and in one-half sizes from 2½ inches to 6½ inches inclusive, with also 1¾ inches to 2½ inches, and 3¾ inches, known also as 4A, and used by many instead of the standard 4 inch pot. A good pot is one which has a clean pot-red color, very porous, very tough, and not too thin, as a thin pot dries out very rapidly. It ought also to have a substantial rim, which, in the larger sizes, serves to give a hold, preventing slipping. Azalea pots, sometimes called two-third pots, are about 1 inch less in depth than the standard pots, and are in demand for stock which does not require a large amount of room for roots, and by some growers for tall or bushy growing stock, because it furnishes a neater looking plant when established. The bulb or seed pan, called also the half-pot, is one half the depth of the standard pot and is used for bulb stock. Pots as manufactured, must necessarily be of various degrees of burning, and tastes as to burning vary as much as men. The best "burn" for average indoor use is that known as "medium burn," while for outdoor use during Winter, the "hard burn" pot is not so liable to crack from heavy frosts. Pots take up moisture to a degree equal to the hardness of "burn." A soft, light

colored pot takes up water readily and also dries out as readily. This, however, is a good point, as the evaporation of moisture from the sides of the pot tends to keep the soil sweet and pure, and to a small degree allow access of air to the roots. On the other hand, a hard burned, dark red colored pot takes up water very slowly and retains it longer, tending to cause sourness in the soil. The "medium burn" pot should therefore be specified when buying pots, as these are favored by successful growers. (For these notes and illustration we are indebted to the Whilldin Pottery Co.

Primula Poisoning.—A correspondent to "The Florists' Review" says that a perfect cure for the irritation caused by Primula obconica, is one teaspoonful of sugar of lead to three quarts of water. The lotion takes two or three days to complete the cure, and not only allays irritation but stamps out the poison entirely.

Rats, How to Destroy.—The chief means of keeping rats from one's place is to have rat-proof buildings, and for preventing the increase or presence of rats have perfect cleanliness everywhere, no waste food or shelter places for them. Dogs, cats, ferrets, hawks, owls, skunks, coyotes, weasels and minks are among their natural enemies and should be encouraged. Trapping, poisoning, fumigating, and the use of micro-organisms (bacteria) are other means adopted for their eradication. Full particulars as to the destruction of rats are given in Farmers' Bulletin 369, published by the U. S. Dept. of Agriculture.

Rental of Greenhouse.—Much depends upon the value of the land upon which the greenhouse stands, and what the greenhouse itself is, whether old, or new, and how built and equipped. The proper way to get at this is first to determine how much capital is invested in the land and greenhouse, then charge a yearly rental which will cover interest on investment at a fair per cent., plus taxes, insurance, repairs, and an allowance for deterioration of greenhouse.

Reviving Young Trees.—When young trees have become dry and bark-shrunken from exposure, they should be stored in a damp, dark cellar, or, better still, buried for a few days in the soil.

Rhododendron Lace Fly.—Knowing that Wm. Kleinheinz of the Wanamaker estate at Ogontz, Pa., had been much troubled with the lace wing fly on Rhododendrons but particularly Azalea amœna, we wrote asking if he had found a cure. He replies: "I am able to control the lace fly by spraying with Imperial soap about three times a year, beginning around May 15 and repeating in three weeks. My Rhododendrons have much improved since I used Imperial soap."

Rose Bushes, Checking Black Spot on.—Spraying Rose bushes in the Fall with Bordeaux mixture will check black spot disease, according to botanists of the Ohio Exp. Sta. Burning affected leaves will kill the fungus, which otherwise would be carried over Winter. Large, irregular black spots on the upper side of Rose leaves show the presence of this disease. Bushy varieties are attacked most seriously. Diseased leaves turn yellow and drop prematurely. Bordeaux mixture is made with two tablespoonfuls of copper sulphate and a half-cup of hydrated lime to a gallon of water. The materials must first be dissolved separately and then mixed.

Ribbons, Trade Sizes of.—The average widths of ribbons are as follows:

No.	5....10	lignes	wide	No.	60....40	lignes	wide
"	7....13	"	"	"	80....45	"	"
"	9....17	"	"	"	100....50	"	"
"	12....21	"	"	"	120....54	"	"
"	16....25	"	"	"	150....60	"	"
"	22....30	"	"	"	200....72	"	"
"	40....35	"	"				

A great many manufacturers call 54 lignes No. 100. There are 11 lignes to the inch.

Rose Aphis, Controlling.—Often the most effective remedy is to turn a fine, forceful stream of water on the insects from a garden hose. Applied often this gives satisfactory results. Solutions of fish-oil or cheaper grades of soap, one pound to four gallons of water, are often useful as a prompt remedy. Shave the soap into the water, dissolve by heating, and add enough water to make up for evaporation. The best remedy is 40 per cent. nicotine sulphate, diluted to one part to 1000 or 2000 parts of water, with fish-oil or laundry soap added; one pound to 50 gallons of mixture. To make small quantities put one teaspoonful of the nicotine sulphate in from one to two gallons of water, adding one-half ounce laundry soap.

San José Scale

a, Adult female scale; *b*, male scale; *c*, Young scales; *d*, larva just hatched; same, much enlarged; *e*, scale removed, showing body of female beneath; *f*, body of female insect, more enlarged; *g*, adult male of the San José scale. (See note on "Scale Insects.")

The Rose Chafer, or "Rose bug," is extremely destructive to all kinds of vegetables, fruits and flowers. It is a long-legged beetle, yellowish brown in color, appearing usually in June. Rose bushes and Grape vines especially suffer from it, but where numerous it attacks other plants. It sometimes also causes the death of young chicks by poisoning. It greatly prefers light sandy regions for breeding; clay

lands are seldom troubled. Farmers' Bulletin No. 721, obtainable from the U. S. Dept. of Agriculture, at Washington, suggests methods of control, as on ornamental hardy plants the use of arsenate of lead, four pounds to 50 gallons of water; in vineyards, timely use of arsenical sprays; or, on fruit trees, the use of arsenate of lead, preferably as a fungicide. One of the best ways of checking the pest is by digging the soil in which it breeds, while the beetle is in the pupal stage. At that time it is extremely sensitive to disturbance. A depth of three inches or more is sufficient. In northern Ohio the best time is from May 25 to June 10; in the South earlier. The least possible sandy land should be left in sod, the heaviest land being reserved for grass.

Scale Insects.—Spray trees early. Early spraying to kill scale insects before any leaves appear may be the difference between success and failure with fruit crop. Entomologists say that 90 per cent. of all the good from spraying comes from that done in March, April and May. All fruit trees, except Sour Cherries, since they are seldom attacked by San José scale, should be sprayed with either commercial concentrated lime-sulphur solution diluted with seven parts of water, or a good miscible oil diluted with 15 parts of water, during March or April before the leaves expand. It is better to spray even as late as when the blossoms are showing pink than to omit this spray for trees infested with scale. The material may be applied with either a hand or a power sprayer. Thoroughness of application is essential to success.

Roses, Cut, Grading of.—Roses for market are graded as follows:

American Beauty

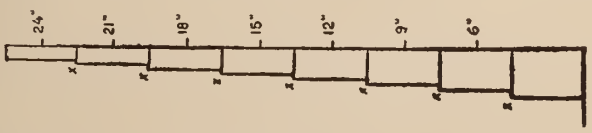
Specials .....36 in. and upward	No. 2 ..... 9 to 13 in.
Fancies .....24 to 35 in.	No. 3 ..... 5 to 8 in.
Extra .....19 to 23 in.	No. 4 .....All less than 5 in.
No. 1 .....14 to 18 in.	

Bride, Bridesmaid, Pink and White Killarney, My Maryland, Richmond, Etc.

Specials .....24 to 30 in.	No. 1 .....10 to 14 in.
Fancy .....18 to 24 in.	No. 2 ..... 7 to 9 in.
Extra .....15 to 17 in.	No. 3 .....All less than 7 in.

Any stock over 30 inches, of the very finest quality bloom, stem and foliage, can be classed as extra special.

All grades from No. 1 up are supposed to have stems strong enough to carry the bloom and clean good foliage. All poor blooms—weak stemmed and mildewed stock—no matter how long the stem may be, should go into the No. 2 and No. 3 grades.



This illustration represents the measure designed by W. H. Elliott, Brighton, Mass., for use in grading Roses, and is very useful, especially

for beginners; it also insures a standard length in all grades. The measure is of wood tapering to 1 inch wide at the top; the bottom has a brass plate screwed on 3½ inches wide by 1¼ inches deep. Any Rose which measures below the cross (X) marks goes into the lower grade.

The A. T. Stearns Lumber Co. of Neponset, Boston, Mass., will supply one of these measuring devices to any Rose grower on request.

Rust from Steel, Removing.—Considerable difficulty is often experienced in removing rust from steel. The simplest method is to cover the steel with sweet oil which should be well rubbed in, and next day rub with finely pulverized unslaked lime.

Scum on Ponds.—Sometimes ponds, either ornamental ponds or those for an irrigation supply, get covered with a scum growth. This may be owing to the presence of floating algæ or similar vegetation. In those cases where much growth occurs, like that of Flannel Weed, men may have to wade and cut this from the bottom by means of scythes. There also exists a weed cutting machine, an English patent, where scythe-like blades are fastened to the stern of a boat and are operated by a scissors motion. If Duckweed, Canadian Waterweed (Elodea), or Azolla form a surface growth, this can be removed by means of drag nets, or strips of burlap or canvas weighted at one edge, and dragged right across over the surface of the water. Another means of purifying such ponds, which was originally recommended by the authorities at Kew, London, but where no fish are in the water, or where it is not for drinking or other use, is to place 1 lb. of copper sulphate in a loosely-woven sack which should be dragged through the water in lines at a distance of about 4 yds. apart. It is usually necessary to apply the copper sulphate (which is a dangerous poison, be it noted) two or three times between April and October. The amount of copper sulphate for use depends on whether the water is running or partially stagnant. One pound of this material is generally recommended, although 2 lbs. to 3 lbs. are sometimes employed. For a large pond, tow the bag or bags behind a boat, and row to and fro in parallel paths. Ordinary commercial sulphate is effective and should be broken small. Another practice is to spray the surface of the water with a weak solution of sulphate of copper, using one part or portion of this to from 750,000 to 1,000,000 parts of the water in the lake. No waterfowl should be about. To discover the cubical contents of the lake multiply the average width and breadth by the average depth of the water. A cubic foot of water weighs 62.32 lbs. Lumps of unslaked lime have also been recommended as a preventive of growth, these being simply thrown into the water from time to time. No fixed quantity can be recommended. Gold-fish help to keep a pond clean.

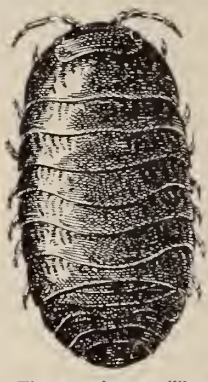
Scum on Soil.—Green algæ often covers the soil in benches and pots and even out of doors, with a green surface scum, which is unhealthy for the plants and does not look well. This can be removed by scraping and by stirring the soil. It is usually proof, however, of a waterlogged or badly drained, cold condition of the soil, and good drainage must be established before the trouble can be thoroughly eradicated. Heavy soil that holds much water is also subject to green scum. Dusting the surface with quicklime is recommended, as this sweetens the soil and kills the green growth. Further than these precautions little can be done.

Shading, Wash for.—A very good wash may be made as follows. Ingredients: 1 lb. of wheat flour, ½ lb. of whiting, and 1 lb. of common candle or tallow. Make the flour into a paste and then put in the candles while the paste is hot; crush the whiting into a powder, mix with cold water, and then add to the paste, also adding as much Brunswick green as required. When required for use warm it in a pail and paint the glass when the sun is shining upon it. In many cases, however, lime-wash by itself is simply sprayed upon the roof glass of greenhouses, and if some salt is added it sticks better.

Slugs and Snails.—To get rid of these pests, so destructive to young plants and seedlings in greenhouses and in the open air, the soil may be dusted with slaked lime, or soot, or with the proprietary preparation called "Slugicide," an English compound. There is also the V. T. H. patent slug trap, by which the slugs, also sowbugs, weevils, wireworms, and leather-jackets are attracted and fall into salt and water. More than 200 slugs and many more sowbugs have been caught by this trap in a single night. Salt is sometimes recommended as good where it can be used without injury to the plants or crop. Moistened bran in which some sugar and Paris green have been mixed, placed alongside the plants, may destroy some snails. Otherwise, place pieces of boards of convenient size flat on the soil. Under these the snails and slugs collect and can be gathered each morning and destroyed. A speedy and sure way to get rid of these pests is to hunt for them in the evening, with a light, or during showery weather, and if stabbed in the shield portion behind the head they die at once.

Soil Sterilization.—Within the last few years we have heard much of the artificial sterilization of soils, and had it advocated as a desirable factor in horticulture or of plant cultivation under glass. The term is a bad one: what is inferred is partial sterilization, and the practice of partially sterilizing one's soil depends upon the fact that the soil contains certain forms of protozoa that are inimical to the nitrifying bacteria, and that while the bacteria pass a portion of their life in the state of spores, the inimical forms have no such resting period. They are, therefore, vulnerable all the time and are killed off by the sterilization processes more rapidly and in larger numbers than the bacteria that are beneficial. The latter, therefore, quickly multiply again, and this multiplication results in an increase of the available nitrate supply, which tells its tale in the quicker, larger growth of the crops. Sterilization is performed best of all by heating the soil. Extreme dryness, continued for some little time, will cause sterilization. But in large establishments sterilization is performed by steam pressure. The soil is filled into a vat, or bin, or box, with a lid, and comprising, say, 70 up to 250 cu. ft., with 2in. piping underneath, such piping being perforated every 3in. or 4in. apart, through which the steam from a boiler is forced. The pressure maintained is just sufficient to cause the whole mass of soil to become heated to about 205 deg. F. and is maintained for 25 minutes at a pressure of 20 lbs.

Other methods of sterilization are to water or sprinkle the soil with mild antiseptics, such as carbon bisulphide, toluene or formalin (a commercial form of formaldehyde), the latter used at the rate of 2 pints of a 40 per cent. formalin in 50 gals. of water, using one gallon of this to each sq. foot of the surface. The bisulphide of carbon is poured or watered into holes in the soil, these being then plugged up; the surface may also be covered with mats. Leave for at least 36 hours. This kills soil insects. It is very volatile and must not be used near a lamp or fire. From a teaspoonful to a tablespoonful to each sq. ft. of soil is generally sufficient. In the case of the steam treatment, the heat kills the bacteria, and possibly some substance toxic to them is also produced. The beneficial results of the practice cannot be questioned.



The greenhouse pillbug (Armadillidium vulgare) extended. Much enlarged. *After Popenoe, Bureau of Entomology, U. S. Dept. of Agriculture.*

Sowbugs, Remedy For.—Wood lice or sowbugs appear to be doing greater injury each year. These creatures prefer dark, more or less damp situations and occur in cellars, in cracks of sidewalks, in garden debris, under boards and in similar places. Some sowbugs when disturbed roll up in the form of a ball, literally playing 'possum or feigning death. They are nocturnal in habit, usually resting securely in hiding places during the day. Normally they feed upon decaying vegetable molds and the succulent roots of plants, attacking the green leaves of delicate plants when these are available. The habit of injuring growing plants appears to be increasing. These creatures are also troublesome in Mushroom beds. They breed quite profusely in piles of manure where they collect for hibernation, etc., i.e., for passing the Winter.

Many remedies have been used with success against sowbugs as they are not difficult to eradicate. The main object is scrupulous cleanliness and equal care in distributing poison where it will in time kill out or "stamp out" the creatures where they are doing injury. Among standard remedies are kerosene-soap emulsion, applied to the soil. Properly applied, not too copiously, they should not injure the roots of plants. Directions for their use and for the preparation of carbolic-acid emulsion are given in Circular 3, issued by the Department of Agriculture, Washington, D. C., a copy of which is obtainable. Some of the tobacco preparations, properly applied, should give equal success.

A simple remedy consists in pouring hot water where the sowbugs accumulate during the day, and another is the employment of poisoned baits. The best for this purpose are the various forms of vegetable roots, such as Potatoes, Turnips, Carrots and the like. For example: Cut a raw Potato in two, hollow out a space in the middle and open a hole at one end. Then dip each portion into Paris green, diluted with about 50 parts of water, or arsenate of lead one part to about 25 of water, bringing the two cut surfaces together. Place them about the beds in the greenhouse or in the garden where the sowbugs are most abundant. Sowbugs will enter the hole left at the end and will be

Unsprayed Sprayed

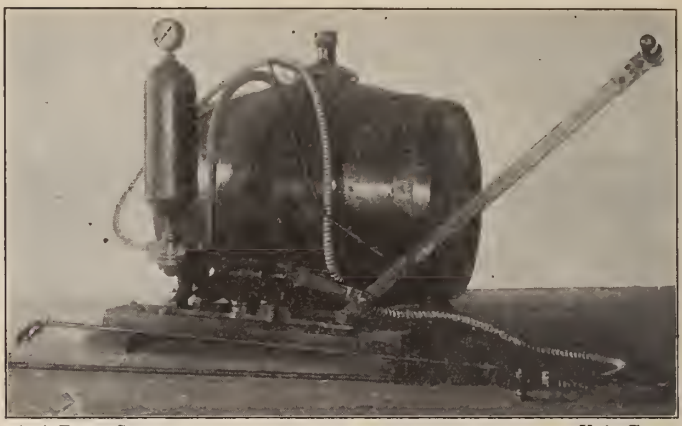
The Results of Spraying Against the Grape-berry Worm.

Sprayed June 10; arsenate of lead 2 lb., Bordeaux 2-3-50, molasses 1½ gal.
Sprayed June 26; arsenate of lead 2 lb., Bordeaux 2-3-50, molasses 1½ gal.
Sprayed July 30; arsenate of lead 3 lb., molasses 1½ gal.
Wormy 10.4 per cent. (From Bull. 293 Ohio Agri. Ex. Stat.)

found in numbers inside. They will also congregate on the outside surface and be killed. If for any reason it is not desirable to use these poisons, the baits may be used without them in the same manner and the Potatoes dipped into hot water which will kill the sowbugs, after which the Potatoes can be replaced or other Potatoes can be substituted.

Sprayers and Spraying.—The instruments employed may be the common hand syringe, a knapsack sprayer (quite large enough for any garden or nursery of two or three acres); or larger movable machines, worked either by hand or by steam or petrol, of which there are many types on the market and to study which the catalogs of the makers should be consulted, or the lists of sundries in any of the large seedsmen's catalogs. One Winter spraying is usually sufficient, this being done in March or before the buds show the first signs of expanding. Choose a fine quiet day for spraying, and settled weather. When rough weather prevails, spraying should be done on one side of the trees only, rather than omit the operation altogether. Dwarf trees may safely be sprayed in any ordinary wind. The Winter spraying is for the destruction of the eggs of injurious insects, scale insects or hibernating ones; also for killing the latent spores of fungi. Summer spraying is carried out to prevent caterpillars from devouring grass, softwooded plants or foliage, or as a preventive of fungus growth, and is carried out generally in June, July or August. (See also "Fungicides" and "Insecticides.")

Soil Acidity a Misnomer.—To speak of soils that need lime as being "acid" is not correct, in the opinion of Ohio Exp. Sta. chemists, who have found only in exceptional cases the faintest trace of acid in soils by treatment with water. So-called soil "acidity" is a negative property, they say, due to the absence of basic calcium and magnesium and not to the presence of acids. If any true acid is present, it is so insoluble as to have little effect on crop growth. Leaching and crop production cause a gradual loss of the natural supply of bases (calcium and magnesium) in the soil. A deficiency of these basic elements ac-



Agri. Exper. Stat. *Univ. Tenn.*

A Simple, Durable and Efficient Barrel Sprayer

counts for relatively low crop yields. When they are supplied by liming, increases in crop yields follow if other conditions are favorable.

Soil Acidity, Test for.—The most common test for determining if soil is acid or sour, according to the U. S. Dept. of Agriculture, is by means of blue litmus paper, which can be obtained at a very small cost from nearly every druggist. A small quantity of moist soil from the field is compacted into a ball, the ball broken into halves, a strip of litmus paper laid across one part and the parts pressed firmly together again. After an hour or so the ball of soil should be again broken apart and the paper removed. If the paper shows a decided pink color the sample of soil is acid. If a deep-rooted crop such as Alfalfa is to be grown it will be well to test samples taken from both the surface and the sub-soil.

State Forests.—Thirteen States now have State forests; New York has the largest with 1,826,000 acres; Pennsylvania comes second with 1,008,000 acres; and Wisconsin third with 400,000 acres. But except for planting and fire control New York does not practise forestry on its State lands.

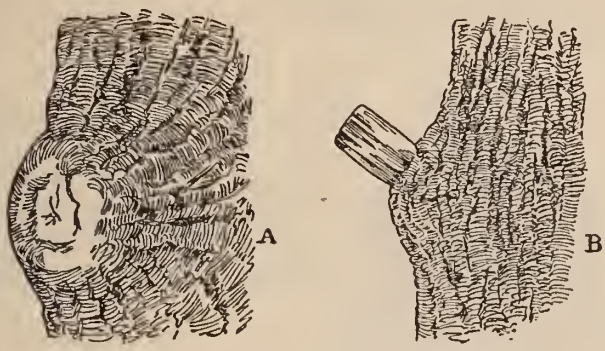
Sulphuric Acid as a Fungicide.—Sulphuric acid may be used as a spray against mildew on Gooseberries or for mildew and rust on Grape vines. Eight teaspoonfuls are equal to one fluid oz.; 16 fluid ozs. equal one pint; 8 pints equal one gallon. A dilution of one to 1000 is used, or in other words, one teaspoonful to one gallon. One fluid oz. to 8 gallons is also employed, or 6 fluid ozs. to 50 gallons.

Sulphuric Acid for Sweet Pea Seeds.—Hard shelled seeds of Sweet Peas can be soaked for half an hour in pure sulphuric acid. After soaking wash the seeds with three changes of water.

Digging.—A writer in the *Gardeners' Chronicle* has been at the trouble to calculate the amount of work done in digging, and the statistics

are really rather interesting. He says that in digging an acre of ground the operator lifted 972 tons of soil in the course of 120 hours' work, and the total energy expended on an acre of digging was 3240 tons.

Skinner Irrigation System.—In regard to the well known Skinner Irrigation System the average cost is about $250 per acre, including the pumping plant and water supply. The equipment in the field will cost probably $125 per acre. From $100 to $150 an acre would cover about nine-tenths of the installations so far as the field equipment is concerned. The rest of the cost is included in the pumping plant, and the cost of this varies considerably with the conditions. It is usually figured that the capacity of the pumping plant may not necessarily need to be equal to the full capacity of the field installation. The Skinner System distributes water at the rate of an inch of rainfall in from nine to eleven hours. An inch of rainfall in two weeks is the average requirement of a crop; under conditions of drought occasion-



Results of Correct and Incorrect Pruning of Trees
a, correct method after two years; *b*, incorrect method

ally a plant requires more water than this, but the average requirement is as above indicated. The selection of water from a well or from a stream is a matter to be determined by local conditions entirely. Theoretically, river water is preferable to well water.

Tent Caterpillar.—The webs of this injurious caterpillar are common in nearly all parts during May. They are especially found in the Wild Cherries and in ill-kept orchards, but the "worms" will also eat the leaves of a large number of forest trees. One of the very best ways of combating this insect is by collecting and destroying the egg masses during the Winter or early Spring. (See illustration, page 191.)

Tree Surgery.—Much greater care is taken of decaying or injured trees than formerly. Tree surgery has been brought to a high degree of perfection, and examples of clever work may be seen in many places. The first operation is the cleaning out and thorough removal of all decayed material, no matter how far the decay extends. The entire surface of the cavity is then disinfected and waterproofed. One firm has a patented device, known as the water-shed, which also excludes

every particle of moisture from the cavity, thus preventing further decay. Thirdly, should the cavity be so large as to require bracing, iron braces, trusses or other mechanical means are resorted to. This adds physical strength to the tree. Fourthly, the cavity is filled with cement, put in in sections, each division or section forming a ball-and-socket joint, allowing for the swaying of the tree, which is another patented device. By thus filling and bracing the limbs of trees it is remarkable how even

Tree Surgery

A Root Pruned Tree with Numerous fibrous roots in a small area

ancient trees or others of much value can be saved, and their existence perpetuated for many generations longer. The cement work may even be completely covered by the bark in the course of time.

Trees, Transplanting. — The great merit of trees from a nursery lies in their fine fibrous root system. Care is always exercised by the nurserymen in this respect, the trees or shrubs being lifted every two or three years, in order to prevent the development of long, sappy roots, and to ensure a mass of fibrous roots. Plants brought in from the wild often fail because of their poor root system. Such a tree as the one illustrated on this page has every chance to succeed.

Tussock Moth.—The caterpillar of this moth is of a general gray color with its back ornamented with a series of four tufts of white hair. The head is bright red in color and has two pencils of black hair extending forward, while a single similar pencil extends back from the end of the body. The very best way of fighting this voracious leaf eater is by collecting the egg masses.

Spinach
passed through slicer and dried

Trays Used for Drying Fruits and Vegetables in the sun

Vegetables, Home Drying of Fruits and.—The object of this fairly simple process is to drive off most of the moisture, thus reducing bulk, making storage easier and also preserving the material from decay. To accomplish this the fruits or vegetables are cut into small pieces, about ⅛in. to ¼in. thick, and exposed to a current of heated air. However, the temperature must not be too high, especially at the beginning of the operation; otherwise the cut surface becomes hard, preventing the interior from drying out and mould is the consequence. From 140 to 150 deg. should be the maximum, which is sufficient to destroy insects and their eggs. Three main methods are available: sun drying, by artificial heat and by air blast. An inexpensive drier may be made of laths and wire screening, and suspended over the kitchen range, or a patented drier purchased. An electric fan may also be used.

Dried Carrots
which were sliced before drying

After drying, the material should be poured from one box into another for three or four days, to give the mass an even degree of moisture, and if it is found too moist it should be dried still further.

In sun drying especially, the food should be protected from insects, which lay their eggs on it, the young grubs destroying it. As the most troublesome are two kinds of moths that fly at dusk or night, it is best to give protection then, with cheese cloth or fly screen.

After drying, store the food in tight containers, in a cool, well-ventilated place, protected from moisture. Cleanliness is necessary to success. Use fresh, young, perfect fruits or vegetables. Full information on the subject is given in Farmers' Bulletin 841, U. S. Dept. of Agri., Washington, D. C., "Drying Fruits and Vegetables in the Home."

Green Peas'
run through meat grinder and dried

Weeds, Control of.—Generally speaking, the fewer weeds, the larger the crops, and the less nutriment extracted from the soil. Weeds in pasture, or in land, or gardens, can be eradicated by preventing them from seeding, by hoeing or scarifying, sometimes by spraying poisons on them or injecting poisons into their roots, as in the case of Dandelions and on lawns. There is a special injecting instrument, somewhat like a syringe with a sharp point, into which poison is filled, and an injection of this is rapidly made into the heart of the plant and a large part of the lawn can be covered very quickly. Rotation of crops and digging are other means of keeping land free from weeds.

Weed Killers.—A newsletter issued by the U. S. Department of Agriculture, Sept. 23, 1914, points out that experiments have been made at Arlington Farm, to find the best material, the best strength of application, and other points in regard to weed killers. The list of materials suggested includes the following: Arsenite of soda; arsenate of soda; common salt; fuel oil; kerosene; gasoline; crude petroleum; sulphuric acid; coal-tar creosote oil; iron sulphate; caustic soda, and other things. The tests showed that of these arsenite of soda, common salt, and fuel oil were the best; the prices being respectively 25c. per pound, $12 per ton, and 12c. per gallon. As to the number of applications required, it has been found that several light applications are better than one heavy one. The quantity of these weed killers to use depends on the character of the vegetation and the soil. On some of the arsenite of soda plots, where the vegetation was largely broad leaved plants, the tops had been practically killed by a light application, at a cost of $1.50 an acre. The amounts given on a test of one square rod are: ¼ pound of commercial arsenite of soda dissolved in 6 gallons of water; 22 gallons of common coarse salt, dissolved in 9 gallons of water, or one gallon of fuel oil. All these applications would cost approximately 12c. per square rod or $20 per acre for the materials. All applications should be made when there is no prospect of rain for 24 hours.

Whitewash.—This is made by slaking about 10 lbs. of quicklime with 2 gals. of water. The lime is placed in a pail and the water poured over it, after which the pail is covered with an old piece of carpet or cloth and allowed to stand for about an hour. With an insufficient amount of water, the lime is "scorched" and not all converted into hydrate; on the other hand, too much water retards the slaking by lowering the heat. "Scorched" lime is generally lumpy and transparent, hence the use of the proper amount of water for slaking and an after addition of water to bring it to a brush consistency. A weatherproof whitewash for exterior surfaces may be made as follows: (1) Slake 1 bushel of quicklime in 12 gals. of hot water; (2) dissolve 2 lbs. of common salt and 1 lb. of sulphate of zinc in 2 gals. of boiling water; pour (2) into (1), then add 2 gals. of skim milk and mix thoroughly. Whitewash is spread with a broad brush.

White Fly, Using Potassium Cyanide Against.—According to circular No. 154, published by the Ohio Agricultural Experiment Station, the white fly, also called the mealy wing or snowy fly (Aleyrodes vapivarium), is not easily killed by the usual means of fumigating or spraying. It is a well known pest of greenhouse plants, in fact one of the worst, and attacks a host of kinds. The circular advises

White Fly

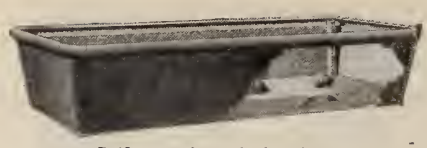
Egg, much enlarged. *b*. Adult female, ventral view, showing proboscis; much enlarged

the use of potassium cyanide, and gives these instructions: Poorly constructed greenhouses may require twice as much material, or even more, than the well made, up-to-date house. In general, one might say that the amount of cyanide varies from one-fifth to one-sixth of an ounce to 1000 cu. ft. of space for three hours after dark, to one ounce to 1000 cu. ft. lasting over night. Fumigation will have to be repeated in two weeks. Another thing to bear in mind is the age of the plants. An older plant will stand a stronger dosage than a younger, more succulent plant. It is also well to have the temperature as low as 55 deg., if possible, for best results.

Whitewash, to Remove.—To remove whitewash from walls or ceiling, scrape off all loose particles with a sharp hoe, and then wash well with strong vinegar. A long-handled mop may be used.

Windows, to Prevent Dimming of, by Moisture.—A leading drug journal gives the following formula for preventing the dimming of windows by moisture: Oil turpentine 1 fl. dr.; Glycerin 1 fl. oz.; Potassium oleate 2 ozs. Soft soap may be used instead of the potassium oleate, though the results are not as satisfactory. Melt the oleate and glycerin together on a water-bath, then add the turpentine. Should the paste be too thick, it may be thinned by the addition of more glycerin. It has also been stated that all that is necessary is to rub every morning, or before going out, a little green soap over the surface of the glass, polishing it until it is bright again. Show-windows, mirrors, etc., may be similarly treated to prevent the dimming by moisture. Another method is to keep a small gas flame burning near the lower front of the window.

Window Boxes.—Some of the supply houses are manufacturing special types of window boxes, notably Neidinger of Philadelphia, Mrs. M. Eger, Syracuse, N. Y.; Garden City Flower Box Bracket Co., Chicago, and the Illinois Flower Box Co., Chicago, an illustration of whose Self-watering Window Box is given here. White Pine boxes are



Self-watering window box

This shows body of box, false bottom above water chamber or reservoir and two sponges by which the water passes up to the soil. The water supply is replenished through a tube in the right-hand back corner.

much used. All boxes should be raised a little above the base or sill on which they rest, otherwise both box and sill quickly rot. The self-watering type prevents dripping. But even they require looking after on hot days, especially in sunny positions. Florists estimate the cost of filling a box at one dollar per lineal or running foot. Among suitable plants are: Asparagus Sprengeri, Ageratum, Aspidistras, Begonias, semperflorens type, Boxwood, Coleus, Cuphæa, Cobæa, Conifers (dwarf), Fuchsias, Hydrangeas, Heliotrope, Ivy (English), Lobelias, Lantanas, Marguerites, Nephrolepis, Pansies, Privet (golden-leaved), Tradescantia, Verbenas, Vincas.

Worms in Pots and Lawns.—To remove worms from pots or lawns, use half an ounce of corrosive sublimate (bichloride of mercury): dissolved in 15 gallons of water. It will cause worms to come to the surface; but care must be taken that fowls do not eat them, otherwise they will be poisoned. A peck of freshly made quicklime mixed with 40 gallons of water, and allowed to stand till it clears, if applied through the rose of a watering-pot, will have the same effect. These mixtures may also be used to remove worms from flower pots.

Section IX

Biographical

Hereunder are brief biographical notices of men who have been prominently identified with movements and activities in the realm of horticulture during the past year. The editor acknwledges with thanks the courtesy of these gentlemen in responding to his request for a few chief particulars of their career. The present list is entirely fresh. Lack of space alone prevents the repetition of notices in the previous Annuals, which should be consulted in conjunction this one.

BARRON, LEONARD

Editor of "The Garden Magazine," born at the Royal Hort. Soc.'s Gardens at Chiswick, London, England, in 1868, where his father, A. F. Barron, was for many years superintendent. The latter was a noted pomologist and writer of books on fruits. Leonard Barron became assistant editor of the (London) "Gardeners' Chronicle." Took special studies in chemistry and botany, later teaching these subjects in schools. Finally came to America, being associated for a time with the A. T. De La Mare Co., Inc. Was secretary of the American Rose Society in its early years; first secretary of the New York Hort. Society (10 years), organizing the International Plant Breeding Conference held in New York. Is connected with numerous societies. Is consulting horticultural editor of "Country Life" and has edited many books on horticultural subjects.

BATCHELOR, LEON D.

Professor of Plant Breeding, University of California. Born May 8, 1884, at West Upton, Mass. Received public instruction in the Massachusetts schools. Graduated from the New Hampshire Agri. Coll. in 1907. Was granted degree of Ph.D. from Cornell Univ., 1910. Horticulturist at the Utah Agri. Coll., 1910-15. Married Florence M. Brown in Denver, Colo., 1912. They have one child. He has written several publications on the classification of the cultivated Peony, pruning of Apple trees, variations of frost occurrence, and the accuracy of field trials.

BLAKE, MAURICE A.

Horticulturist; born Dec. 1, 1882, at Millis, Mass.; B. S. Mass. Agri. Coll. 1904; Asst. Horticulturist R. I. Agri. Exp. Sta. 1904-1905; Instructor in Horticulture, Mass. Agri. Coll. 1905-1906; horticulturist, N. J. State Agri. Exp. Sta. since 1906; Prof. of Hort., Rutgers Coll. Since 1906 established N. J. State Exp. Peach orchards at Vineland, N. J.; organized extensive investigations with Peaches, Carnations, Roses and other plants published several bulletins and reports. Was president of the Amer. Society for Horticultural Science during 1916.

BRITTON, WILTON EVERETT

Conn. State Entomologist; born in Marlboro, Mass., Sept. 18, 1868; moved to Gilsum, N. H., in 1869; educated in the public schools and the N. H. Coll. of Agri. and the Mechanic Arts, graduating in 1893. In 1893-94 took special studies at Cornell; was Horticulturist of the Conn. Agri. Exp. Sta 1894-1901; State Entomologist from 1901 to date. From 1899 to 1903 took graduate studies at Yale, receiving degree of Ph. D. in 1903. Was entomologist of the S. A. F. and O. H. in 1914 and in 1915; is an active member of the Amer. Ass'n of Econ. Entomologists and was pres. in 1909; is a fellow of the Ent. Soc. America and the American Ass'n for the

Advc. Sc. Since 1909 has been associate editor of the "Journal of Economic Entomology." Has published a series of 16 reports as State Entomologist and many bulletins and articles in scientific journals. Married 1895, to Bertha Madelaine Perkins.

BROWN, BLISS S.

Professor of Horticulture, University of Maine; born in Mark Center, Williams Co. O., Sept. 15, 1880. Moved to Allegan Co., Mich., 1882. Attended the common schools in Mich. and entered the State Agri. Coll. at East Lansing, 1899. Graduated with B. S. degree in 1903. The four years following was spent in traveling and working in different States. Worked in the fruit belts of North Western Canada, Washington, Cal., Texas, Kansas and Mich. Spent one Winter in Bronx Park, New York City, and one in Boston in gypsy moth work. Began teaching horticulture in the Baron de Hirsch Agri. School, New Jersey, 1907. In 1909 went to Cornell Univ. to do graduate work, leaving in the Fall for the Univ. of Cal., as instructor in horticulture. Received M. S. degree from the Univ. of Cal. 1911. Since Sept., 1913, has been Professor of Horticulture in the University of Maine. Has written three text books on horticultural subjects, mostly on pomology.

BUTLER, ORMOND ROURKE

Botanist New Hampshire Exp. Sta. Born Aug. 14, 1877, Melbourne, Victoria, Australia. Graduate Ecole Agricole, Lausanne, Switzerland, B.S. and M.S. Univ. of California; Ph.D. Cornell Univ. F. A. A. Formerly assistant sucessively in the departments of viticulture and pathology, Univ. Cal.; research instructor in horticulture, Univ. of Wisconsin, 1910-12. Professor of botany New Hampshire Coll., and botanist New Hampshire Exp. Sta., 1912 to date. Fields of special interest: Physiological diseases of plants; theory of the use and application of fungicides, rationalization of formulæ.

COATES, LEONARD

Nurseryman and horticulturist. Born in England in 1855, emigrated to California in April, 1876, where he worked on a fruit farm and in vineyards, starting a nursery in 1878. Was a charter member of the California State Hort. Society, and later identified with both the viticultural and horticultural commissions. He is at present president of the California State Nurserymen's Ass'n. Has two sons, the elder being identified with him in business. Mr. Coates has made a specialty of the improvement by breeding up of the "French Prune," and made a recent visit to France on a tour of investigation. Has also specialized in the propagating of native California trees and shrubs; his extensive grounds near Morganhill, Santa Clara Co., show a collection of nearly 150 species.

CUMMINGS, MARSHALL B.

Professor of Horticulture, University of Vermont. Born Dec. 2, 1875, at North Thetford, Vt. Attended common schools and Thetford Academy; later entered the Univ. of Vermont and State Agri. Coll., from which he graduated with B. S. in agriculture in 1901. In 1902 became assistant in horticulture and botany at the Univ. of Maine, remaining there for five years, receiving the degree of M.S. in 1904. Attended Summer sessions of the Brooklyn Institute of Arts and Sciences at Cold Spring Harbor, Summer 1905 and 1906. Instructor in horticulture at Cornell 1907 to 1909, receiving the degree of Ph.D. in 1909. Professor of horticulture at Univ. of Vermont and horticulturist of the Vermont Agri. Exp. Sta. since Sept., 1909. Inspector of nurseries since 1909. Sec'y Vermont State Hort. Soc. Married, 1910, Lura Alice Bugbee; has one child. Has published several bulletins on horticultural subjects.

DAVEY, JOHN

Born in Somersetshire, England, in 1846. He was reared at agriculture until he was 20 years of age. He then apprenticed himself at horticulture for two years in Torguay, Devonshire, which was followed by two years at floriculture and two at landscaping. He came to Warren, Ohio, in the Spring of 1873 and followed floriculture until 1881, when he again branched out into landscaping, choosing Kent, Ohio, as a home. He published his first edition of "The Tree Doctor" in 1901. In 1903 he established his school of practical forestry, and in 1907, with the aid of his son, Martin L.,

organized the Davey Tree Expert Company which was followed by the founding of the Davey Institute of Tree Surgery. In 1914 the institute curriculum was supplemented by the well-known extension course edited under Mr. Davey's supervision.

DE BAUN, ROSCOE W.

Specialist in market gardening; born Dec. 16, 1887, at Caldwell, N. J. Was brought up on his father's produce farm there. Graduated from the local high school and from the State Agri. Coll. in June, 1911. Returned to the commercial vegetable growing industry for 3½ years. Since Jan. 1, 1915, he has been the Specialist in Market Gardening for the extension division, N. J. Agri. Coll. Writes frequently for agricultural publications; is chairman of the membership committee of the Vegetable Growers' Ass'n of America, member of the executive committee of the State Hort. Society.

EUSTACE, HARRY JOSHUA

Professor of Horticulture, Mich. Agri. College; born Rochester, N. Y., April 24, 1877. Attended Rochester schools and graduated from Michigan Agri. Coll. in 1901. Was Assistant Botanist at New York Agri. Exp. Sta. from 1901 to 1906; Assistant Pomologist U. S. Dept. of Agri. 1906 to 1908, working especially on the problems of fruit storage and transportation. Has been Professor of Horticulture, Mich. Agri. College from 1908 to date. Has written bulletins and reports upon economic plant pathology and general horticulture.

FLOYD, W. L.

Professor of Horticulture, Florida College of Agriculture. Born April 6, 1866, at Nicholas, S. C. Graduated from "The Citadel," Charleston, S. C., in 1886. Taught in the schools of South Carolina for five years; instructor in East Florida Seminary for 13 years. Has been professor in the Univ. of Florida since its establishment in 1905. first as assistant professor of biology, later as professor of botany and horticulture, with the degree of M.S., 1906. A contributor to horticultural journals, and lecturer on horticultural subjects.

GOURLEY, JOSEPH HARVEY

Pomologist; born July 1, 1883, at Homer City, Pa. In 1893 removed to Lancaster, O.; attended the grade and high schools of that city, and graduated from Ohio State Univ. in 1908. Foreman of Univ. gardens, orchards and greenhouses 1906-1908; Assistant Horticulturist, Ohio Exp. Sta., Wooster, O., 1908-1910; Assistant Prof. of Hort., Ohio State Univ. 1910-1912. Since 1912 has been Prof. of Hort. N. H. Coll., and Horticulturist, N. H. Exp. Sta. Has published papers on Potatoes, Strawberries, Orchard Culture, Studies in Fruit Bud Formation, Orchard Soils, Thinning and Spraying of Fruit, and Studies on Growth of Fruit Trees. Has degrees of B. S. and M. S.

GULLEY, ALFRED GURDON

Horticulturist Connecticut Agri. Exp. Sta. Born at Dearborn, Mich., July 15, 1848. Worked with his father in wholesale vegetable growing. Attended the district and graded schools, and took the regular course at the Mich. Agri. Coll., graduating in 1868. Shortly after graduating he spent three years in Detroit and Rochester, N. Y., learning the greenhouse and nursery trade. During the next 15 years he was engaged in fruit growing and nursery work at South Haven, Mich. Married there. In 1890 returned to the Mich. Coll. as assistant in the hort. dept. Remained four years; then was one year at the Univ. of Vermont, teaching horticultural branches. In 1894 went to Storrs, Conn. to develop the horticultural department of the Connecticut Agri. Coll., and has just completed 23 years of service at that institution. Has one adopted son, following in the same line of work. Served two terms as pres. Conn. State Pomological Soc. Has given much attention to fruit classification and has the credit of being one of the best posted men on Apple varieties in the East.

HEDRICK, ULYSSES PRENTISS

Horticulturist, New York State Agricultural Experiment Station. Born Jan. 15, 1870, near Cedar Rapids, Ia. At an early age removed to Indiana and from there to Harbor Springs, Mich. Graduated from High School in 1887 and from the Michigan Agri.

Coll. in 1893. Was assistant horticulturist in the Mich. Agri. Coll. until 1895; then professor of horticulture and botany in the Oregon Agri. Coll. until 1897; in Utah Agri. Coll. until 1899; again in Mich. Agri. Coll. until 1905. Since that time has been horticulturist in the New York State Agri. Exp. Sta. Master's Degree in Science in 1895 and Doctor's Degree (by Hobart Coll.) in 1913. Married Amy Willis Plummer in 1898 in Oregon, and has two children. Has written several books on fruits, a number of bulletins from four State exp. stas., and contributed to periodical literature.

JOHNSON, T. C.

Director of the Virginia Truck Exp. Station. Born Jan. 1, 1870, at Long Reach, W. Va. Attended the common schools and graduated from the State Univ. in 1896. Taught for a few years in the W. Va. Univ. and the Missouri Agri. Coll.; then took graduate work in hort. at Cornell. Accepted a position at the W. Va. Univ. in Horticulture in 1903. Went to Norfolk, Va., in 1907 to organize the Virginia Truck Exp. Sta. Director since 1909. Has published several bulletins and done farmers' institute and agricultural lecture work in several States.

JOHNSON, CHAS.

Seedsman. Born in Philadelphia, Pa., March 9, 1845. On his father's side he is a member of one of the oldest of Philadelphia's Quaker families; his mother's father, John Venai, was a French officer under Napoleon, and emigrated to America with Joseph Bonaparte, Napoleon's brother. When Lafayette visited America in 1824, he called upon John Venai at his home in Lancaster, Pa., and dandled Mr. Johnson's mother upon his knee; she was then a year old. Mr. Johnson was educated in Philadelphia's public schools; after leaving school he spent a year at the study of law, but gave it up for a mercantile life. He entered the seed business in 1864 and has been in it ever since, variously in Philadelphia, Chicago, Memphis and in California. He is at present, and has been for the past 11 years, American agent for Denaiffe & Son, seed growers, Carignan and La Menitre, France. He is still a stockholder in the Victor Johansen Seed Co., California. Is a member of the 44th or war class of the Philadelphia High School, the Wild Cat Falls Club, York, Pa.; the Colonial Club, Marietta, Pa.; the Masonic Club, San Francisco, Cal., and the California Society of the Sons of the American Revolution. He was a member of the first World Eugenic Congress, which met in London in 1912, presided over by the son of Charles Darwin, and in that Congress sat side by side with Prince Kropotkin, the Russian exile, who has just been called back to Russia. Mr. Johnson has written considerably for newspapers; first as a dramatic critic, in later years upon the political and economic subjects of the day. Is the author of "The Seedsman's Assistant" and "The Seed Grower," books which have had a wide sale in the trade.

JOHNSON, STEPHEN B.

Acting horticulturist, University of Arizona; born Jan. 4, 1891, at Louisville, Ky.; moved to Illinois at the age of 10 years, and thence to Oklahoma at the age of 17. Attended the Okla. A. and M. College, graduating in 1912. Was principal of the Oklahoma State Home for Orphans for a few months, then assistant horticulturist at the N. D. A. C. for a year. From there went to the Jewell Nursery Co., at Lake City, Minn. Studied at the Univ. of Ill. Since then has been asst. horticulturist and acting horticulturist at the Univ. of Arizona. Married Myrtle Lewis in Oklahoma in 1912. Has one child. Is publishing a bulletin on "Head Lettuce in Arizona."

LEWIS, CLAUDE ISAAC

Chief of the Division of Horticulture, Oregon Agri. College. Born April 12, 1880 at Cardiff, Wales. At the age of 2½ years came to Massachusetts and lived on a farm. Graduated from the Mass. Agri. Coll. in 1902. Engaged in teaching at Rockland, Mass., and at Alfred University, Alfred, N.Y., three years. Received his master's degree in agriculture at Cornell Univ., Ithaca, N. Y., in 1906. Soon thereafter was appointed Chief of the Division of Horticulture at the Oregon Agri. Coll., Corvallis,

Ore., where he has remained for 11 years. Married Miss Marie Berry of New York and has five children. Has written many bulletins on general horticultural subjects.

LUMSDEN, DAVID

Assistant professor of floriculture, Cornell, N. Y. Born June 21, 1871, at Bloxholm, England; attended the public schools and graduated from the Sleaford Collegiate Academy 1892. Received early training in horticulture under his father, the late David Lumsden of Bloxholm Hall, and at Veitch's Nurseries, London, where he made an extensive study of exotic and orchidaceous plants, and at the Royal Gardens, Kew. Was foreman and decorator at Cliveden, Maidenhead, the estate of the late Duke of Westminster. Emigrated to America and received the position of foreman to the Nova Scotia Nursery Co., Halifax, N. S., later foreman and afterward manager to the William H. Edgar Co., Waverley, Mass. Served with Thomas F. Galvin Co. and Edward McMulkin, of Boston, Mass., as assist. decorator and landscape gardener. Appointed assistant and afterward instructor in horticulture at the New Hampshire State College. Married, and has four children. Fellow R. H. S., member S. A. F., member Mass. Hort. Soc., member Amer. Soc. for Hort. Sc., member Nat. Geographic Soc., National Grange P. of H., N. H. Consistory 32d deg. and Commandery K. T. Has written several bulletins and papers on horticultural and landscape gardening subjects; also contributed to periodical literature.

McCUE, CHARLES ANDREW

Horticulturist, Del. Agri. Exp. Sta.; born May 29, 1879, at Cass City, Mich.; spent first 17 years of his life on the farm. Was educated in country schools, Cass City High School and was graduated from the Mich. Agri. Coll. in 1901. Was employed for two years in U. S. Forest Service; Instructor of Horticulture in Mich. Agri. Coll. Since 1907 has been Horticuiturist of the Del. Agri. Exp. Sta., and Professor of Horti. in Del. Coll. In the meantime has pursued graduate work at Mich. Agri. Coll. and the Univ. of Pa. Author of several bulletins and papers on fruit and vegetable gardens. For three years was associate editor of "The Practical Farmer." Is 32d degree Mason.

MAYHEW, J. R.

President Waxahachie Nursery Co. Born May 12, 1869, in Madison County, Ala. Educated in the schools of Huntsville, Ala. Moved to Texas in 1891 and engaged in the nursery business at both McKinney and Sherman, Texas, until 1900. Moved to Waxahachie in 1900. Established the Waxahachie Nursery Co. in 1901, and since its incorporation has served as pres. and gen. mgr. Married in 1899. Member of Presbyterian Church U. S. A., and ruling elder in Waxahachie congregation. Vice-chairman Board Trustees Trinity Univ., the Presbyterian Coll. of Texas. Has served the Texas Nurserymen's Ass'n as pres. three years. Elected pres. Southern Ass'n of Nurserymen in 1913. At present member of exec. comm. of Amer. Protective Ass'n and vice-pres. Amer. Ass'n of Nurserymen.

MOON, JAMES EDWARD

Nurseryman, born in Bucks County, Pa., March 22, 1882, on the nursery homestead of his father, Wm. H. Moon. Attended the local schools and boarding school at Westtown, Chester County, Pa., graduating in 1902. Immediately afterward entered the nursery business in which he had spent much of his boyhood learning the trade. Worked in all branches of the nursery trade, specializing in landscape work. Is sales manager of the Wm. H. Moon Co. nurseries at Morrisville, Pa. Married, 1909, Mary P. Brown. Is president of the Bucks County Natural Science Ass'n, a member of the Rotary Club and of the American Civic Ass'n. Residence, Morrisville, Bucks Co., Pa.

McHATTON, THOS. HUBBARD

Professor of Horticulture, Georgia State College of Agriculture. Born Nov. 12, 1883, at Brooklyn, N. Y. When still a baby moved to Macon, Ga. Attended school there intermittently; also went to school in Brooklyn. Graduated from Spring Hill Coll., at Mobile, Ala., in 1903 and received Doctor of Science degree from the same institution in 1907. Graduated from the Michigan Agri. Coll. in 1907. Attended Cornell

Univ. for Summer course. Attended the Post Graduate School of Agri., at Ames, Ia. Was elected teacher of science and agriculture in the Sixth District Agri. School of Georgia. Was horticulturist of the Georgia Exp. Sta. for the year 1908 and in Nov., 1908, became professor of horticulture. He is now head of that division. Married Marie Lustrat in Athens, Ga. Has been horticultural editor of the "Southern Ruralist" since 1908. Author of several bulletins and scientific papers. Member of the Amer. Soc. for Advancement of Science, the Soc. for Hort. Science, also the Amer. Ass'n of Genetics and the Alpha Zeta fraternity; also sec'y of the Georgia State Hort. Society.

MOORE, JAMES GARFIELD

Horticulturist of the Wisconsin Exp. Station. Born Oct. 22, 1881, at Shepherd, Mich. Attended the common schools and the Mich. Agri. Coll.; graduated in 1903. During part of 1903 and 1904 served as horticultural editor on the staff of the "Michigan Farmer." Returned to the Mich. Agri. Coll. in the Fall of 1904 to pursue advanced study. Received the degree of M.S. in June, 1905. Immediately took up work as instructor in the Dept. of Hort. of the Univ. of Wisconsin, later was professor, and since 1909 has been chairman of the Department of Horticulture, and Horticulturist of the Wisconsin Exp. Sta. In 1909 received hon. degree of Master of Hort. Has written several bulletins and contributed to the agricultural press. Married; has one daughter.

MORRIS, OSCAR M.

Professor of Horticulture and head of the department, State College of Washington. Born in Kansas and raised there and in Oklahoma. Attended public school in Kansas and graduated from the Oklahoma Agricultural and Mechanical College in 1896. Later studied horticulture at Cornell Univ. In 1898 was elected assistant in horticulture in Oklahoma Agricultural and Mechanical College, and advanced later to the head of the department, receiving his recent position in 1911. Married Leona Jane Hall and has two children. Is the author of several experiment station bulletins.

PILLSBURY, JOSHUA P.

Professor of Horticulture, North Carolina State College; born Dec. 7, 1873, at Buena Vista, O. Attended the common schools of Ohio and the Newark High School until March, 1891; then secured a four-year scholarship in the Missouri Botanical Garden, St. Louis, Mo., from which institution received a certificate as qualified gardener in 1895. Became connected with the Pa. State Coll. in the Fall of 1894 as head gardener; in 1898 made Assistant in Horticulture. Secured degree of B. S. in 1910. Taught floriculture and landscape gardening, 1908 and 1909. Upon graduation was made assistant professor of landscape gardening and placed in charge of the four-year professional course in landscape architecture, which he designed and established at that institution and which was offered for the first time in 1910. In Aug. 1911, he was elected Prof. of Hort. in the N. C. State Coll. and Exp. Sta. Married Charlotte Dunford of St. Louis, Mo., who died in 1916; has two children.

PRICE, HARVEY LEE

Horticulturist, Va. Exp. Sta.; born March 18, 1874, at Price's Fork, Va. Raised on farm; attended common schools and graduated from the Va. Poly. Inst. in 1898; received M. S. degree in hort., ento. and mycology in 1900. Employed for several years as instructor in horticulture; was then made Professor of Horticulture and Horticulturist of the Va. Exp. Sta.; Dean of Agri. Dept. since 1908. Has published a number of papers on pomology and plant breeding.

ROUSE, IRVING

Nurseryman; born at Leeds, N. Y., Oct. 23, 1853. Pres. American Nurserymen's Protective Ass'n; pres. Geneva Preserving Co., Geneva, N. Y.; ex-pres. American Ass'n of Nurserymen; director Security Trust Co., Rochester, N. Y.; the Empire Coke Co., Geneva, and the Empire Gas and Electric Co., Geneva. Director for nine years of the N. Y. State Experiment Station. For 20 years chairman of the American Nurserymen's Tariff Committee. In addition to the preceding interests he is actively engaged in growing and importing nursery stock.

SEARS, FRED COLEMAN

Professor of Pomology, Mass. Agri. College; born May 11, 1866, at Lexington, Mass. At an early age removed to Kansas. Attended the public schools of Kansas, with one year in the grammar schools of Boston, Mass. Graduated from the Kansas Agri. Coll. in 1892. Was assist. horticulturist in Kansas Exp. Station till 1896; then Prof. of Hort. in Utah Agri. College; from 1897 to 1905, Director Nova Scotia School of Hort.; then Prof. of Hort. Nova Scotia Agri. College till 1907. Since then Prof. of Pomology, Mass. Agri. College. Married Ruth Stokes, also a graduate of the Kansas Agri. College, and has two children.

SHAW, JACOB KINGSLEY

Research Pomologist; born at Northfield, Vt., Aug. 5, 1877. Attended country schools and worked on farm during youth; graduated from the agricultural course of the Univ. of Vt. in 1899. Engaged in farming for three years and has since been connected with experiment station and agricultural college work in N. J., Mo. and N. H. Now research pomologist of the Mass. Exp. Sta. Has degrees of M. S. and Ph. D. Married Bertha T. Simpson in New Jersey and has four children. Investigation work has been in plant breeding and pomology.

SMITH, E. D.

Nurseryman; pres. of E. D. Smith & Son, Ltd., Winona, Ont.; pres. of Beamsville Preserving Co., Beamsville, Ont.; pres. Lambton Packing Co., Petrolea, Ont.; born Dec. 8, 1853, near his present home. Educated at public schools and Hamilton Collegiate Institute. Carries on in addition to nursery business a mercantile business, viz., the buying and selling of domestic fruits grown in the Niagara district. Manufactures jams, jellies, etc., at Winona. Is largely interested in canning factories, being also pres. of Canadian Canners, Ltd., and has 600 acres of land under intensive cultivation—fruit, vegetables and nursery stock. Was elected to the House of Commons of Canada in 1900, again in 1904; was called to the Senate in 1913. Has two sons, one of whom, Major Armand A., is now at the front, and one daughter.

STARK, LLOYD

Pres. Amer. Ass'n Nurserymen; born Nov. 23, 1886, at Louisiana, Mo.; educated in the public schools and a graduate of the U. S. Naval Academy at Annapolis. Is ex-pres. of the Western Ass'n of Nurserymen; pres. of the Mississippi Valley Apple Growers' Ass'n, pres. Louisiana Commercial Club, member of the Wholesale Ornamental Growers' Ass'n, Amer. Protective Ass'n, Retail Nurserymen's Protective Ass'n, Missouri Nurserymen's Ass'n, Amer. Rose Society, Missouri Hort. Society, the Army and Navy Club, Washington, D. C.; the University Club, St. Louis, and the Army and Navy Club, New York City. Is vice-president and general manager of the century-old nursery, the Stark Bros. Nurseries and Orchards Co., Louisiana, Mo. Mr. Stark is the eldest son of the late Clarence M. Stark, who for many years was head of the Stark Bros. Nurseries and Orchards Co., and from whom Lloyd Stark inherited much of his horticultural and pomological knowledge. [Since the above was written Mr. Stark has joined the U. S. military forces.]

THOMPSON, H. F.

Professor of Market Gardening, Mass. Agri. College; born June 29, 1885, Westford, Mass.; graduated from Mass. Agri. Coll., 1905; taught horticulture at Mt. Hermon School, 1906; in charge of the field work of the Dept. of Hort., Mass. Agri. Coll., 1907 to 1910, and instructor in market gardening and commercial vegetable grower, 1910 to 1915; prof. of this subject 1915 to date.

THURLOW, WINTHROP H.

Peony specialist and nurseryman, treas. of T. C. Thurlow's Sons, Inc. Born in West Newbury, Mass., Oct. 29, 1887. Third son and lifelong companion of the late Thomas C. Thurlow, the most noted Peony grower on this continent. Educated in the public schools of West Newbury and Newburyport. A high authority on, and judge of, Peonies. Is active member of the Peony Society and life member of Massachusetts Horticultural Society. For the past four years he has been secretary and treasurer of the Massachusetts Nurserymen's Association.

VALLANCE, JOHN

Nurseryman and orchardist. Born in June, 1862, at Edinburgh, Scotland; came to California in 1886, entered the nursery and orchards of B. S. Fox, San José, Cal. He had been with leading nurserymen of the State. Took over the present business, the Vallance Nursery, Oakland, Cal., three years ago. Was president of the Pacific Coast Ass'n of Nurserymen in 1914.

VINCENT, C. C.

Professor of horticulture, University of Idaho. Born May 3, 1884, at Middleton, Ore. Raised on the farm. Attended the public schools of Oregon and graduated from the Oregon Agri. College B.S. (agri.), also M.S. (Agri.). Did graduate work at Cornell University, degree of M.S. (Agri.). Is married; has three children. Was assistant in horticulture, Oregon Agri. College, Corvallis, Ore.; associate professor of hort. Clemson Agricultural College, Clemson, S. C. Is professor of horticulture and horticulturist, Univ. of Idaho, Moscow, Idaho. Mr. Vincent is working on a number of horticultural problems. Apple breeding, studying 10,000 crosses; irrigation studies; vegetable gardening, etc. Bulletins: Orchard Survey of Jackson Co., Ore.; Pollination of the Apple, Oregon; Strawberry Culture in Idaho; Canning Fruits and Vegetables on the Farm; Recommended Varieties of Fruit for Idaho; Commercial Onion Culture in Idaho; Winter vs. Summer Pruning of Apples, Idaho; also numerous articles.

WHIPPLE, O. B.

Horticulturist Montana Agri. Exp. Station. Born Dec. 8, 1879, at Ottawa, Kans. Grew up on a large stock and grain farm. Graduated from the Kansas Agri. Coll. in 1904 and spent the following year in graduate work in the department of hort. Mass. Agri. Coll. Instructor in hort. Colo. Agri. Coll., 1905-06; field hort. Exp. Sta. 1906-09. Since 1909 professor of hort. and horticulturist of the Montana Agri. Coll. and Exp. Sta. Author of bulletins upon horticultural subjects from both the Colorado and Montana Stations. Joint author with Prof. W. Paddock of "Fruit Growing in Arid Regions," a text book on Western horticulture.

WHITTEN, J. C.

Horticulturist, Missouri Exp. Sta. Born in Augusta, Me., Sept. 14, 1866. At 16 years of age went to Dakota and taught school three years. Graduated from the South Dakota Agricultural College, B.S., 1892; M.S., 1897. Was a student at Cornell Univ. part of 1892; student and assistant, Missouri Botanical Garden, 1893 and 1894. Student, Horticultural Institute at Geisenheim, Germany, one term; also at Univ. of Halle one year, taking Ph.D. in 1902. Traveled in horticultural section of Europe two Summers. Has been professor of horticulture and horticulturist at the Exp. Sta. of the Univ. of Missouri since 1894. Married Nora Todd at Columbia in 1895 and has three children. Is a member of the leading National horticultural organizations and of several State organizations. Is author of numerous experiment station bulletins on horticultural subjects, contributor to horticultural periodicals and lecturer on horticultural and rural life subjects.

WICKS, WILLIAM HALE

Professor of Agriculture, Arkansas University. Born Nov. 30, 1881, in Macon County, Ill.; removed to Oregon at the age of nine. Attended the high school in Corvallis, Ore., and graduated from the Oregon Agri. College in 1904. Was assistant horticulturist at Oregon Agri. College, 1904-1907, during which time he received the degree of M.S. from Oregon; M.S.A. from Cornell University, 1908. Was professor of pomology and assistant horticulturist, New Hampshire College, 1908-1909; was called to the chair of horticulture, Idaho University, Sept., 1909; accepted the chair of horticulture at Arkansas University in Feb., 1914. He was secretary and treasurer of the Bi-Products Committee of the North Pacific Fruit Distributers, 1913-14; trustee Sixth National Apple Congress, 1913. Is a member of the American Society for Horticultural Science and the American Pomological Society.

ADDRESSES

National, State and Sectional Societies

Alabama State Hort. Society.
President: J. H. McCarty, Birmingham, Ala.
Secretary-Treasurer: J. C. C. Brice, Alabama Exp. Sta., Auburn, Ala.

Albany (Ga.) District Pecan Exchange.
President: Wm. P. Bullard, Albany, Ga.
Vice-president: R. P. Jackson, Baconton, Ga.
Secretary: A. D. Galt, Albany, Ga.
Treasurer: J. W. Gillespie, Albany, Ga.

American Academy of Arborists.
President: Hermann W. Merkel.
Secretary-Treasurer: J. J. Levison, M.F., Arboriculturist, New York City, Park Dept., Municipal Bldg., New York City.
Meets annually.

American Association For the Advancement of Science.
Permanent secretary: L. O. Howard, Smithsonian Institute, Washington, D. C.
Assistant Secretary: F. S. Hazard, Smithsonian Institute, Washington, D. C.

American Association of Economic Entomologists.
President: Prof. R. A. Cooley, Bozeman, Mont.
First Vice-president: Dr. W. E. Hinds, Auburn, Ala.
Secretary: A. F. Burgess, Melrose Highlands, Mass.
Meets annually.

American Association of Horticultural Inspectors.
Secretary: T. B. Symons, College Park, Maryland.

American Association of Nurserymen.
President: Lloyd C. Stark, Lousiana, Mo.
Vice-president: J. R. Mayhew, Waxahachie, Texas.
Secretary: Curtis Nye Smith, 19 Congress St., Boston, Mass.
Treasurer: J. H. Hill, DesMoines, Ia.
Meets annually.

American Association of Park Superintendents.
President: J. F. Foster, Supt. South Parks, Chicago, Ill.
Vice-president: John Barry, retired Supt. of Parks, Denver, Col.
Secretary: R. W. Cotterill, Sec'y. Park Board, Seattle, Wash.

American Carnation Society.
President: W. J. Vesey, Jr., Fort Wayne, Ind.
Vice-president: Chas. S. Strout, Biddeford, Me.
Secretary: A. F. J. Baur, Indianapolis, Ind.
Treasurer: F. E. Dorner, La Fayette, Ind.
Meets annually.

American Cemetery Superintendents, Association of.
President: W. N. Rudd, Mt. Greenwood Cemetery, Chicago, Ill.
Vice-president: W. H. Atkinson, Riverview Cemetery, Trenton, N. J.
Secretary: W. B. Jones, Highwood Cemetery, Pittsburgh, Pa.
Meets annually.

American Civic Association.
President: J. Horace McFarland, Harrisburg, Pa.
Vice-president: Dr. John Nolen, Cambridge, Mass.
Secretary: Richard B. Watrous, 914 Union Trust Bldg., Washington, D. C.
Treasurer: Karl V. S. Howland, New York City.
Meets annually, October or November.

American Cranberry Growers' Association.
Secretary: A. J. Rider, Hammonton, N. J.

American Dahlia Society.
President: Richard Vincent, Jr., White Marsh, Md.
Secretary: J. Harrison Dick, 1426 73rd st., Brooklyn, N. Y.
Treasurer: F. R Austin, Tuckerton, N. J.

American Entomological Society.
Secretary: Henry Skinner, Philadelphia, Pa.

American Federation of Horticultural Societies.
Secretary: C. E. Bassett, Fennville, Michigan.

American Fern Society.
President: William Palmer, Smithsonian Institute, Washington, D. C.
Vice-president: Mrs. Mary Adam Noble, Inverness Fla.
Secretary: C. A. Weatherby, 1062 Main st., East Hartford, Conn.
Treasurer: Jay G. Underwood, Hartland, Vt.

American Forestry Association.
President: Charles Lathrop Pack, Lakewood, N. J.
Secretary: Percival Sheldon Rldsdale, 1410 H St., N. W., Washington, D. C.
Treasurer: John E. Jenks, 511 Eleventh St., N. W., Washington, D. C.
Meets annually.

American Genetic Association.
President: Dr. David Fairchild.
Vice-president: Dr. W. E. Castle.
Secretary: Geo. M. Rommel, Washington, D. C.
Treasurer: Corcoran Thom.

American Gladiolus Society.
President: A. E. Kunderd, Goshen Ind.
Vice-president: H. E. Meader, Dover, N. H.
Secretary-Treasurer: Madison Cooper, Calcium, N. Y.

American Peony Society.
President: James Boyd, Haverford, Pa.
Vice-president: A. H. Fewkes, Newton Highlands, Mass.
Secretary: A. P. Saunders, Clinton, N. Y.
Treasurer: T. H. Humphreys, Chestnut Hill, Pa.
Meets annually.

American Pomological Society.
President: Dr. L. H. Bailey, Ithaca, N. Y.
Vice-president: W. T. Macoun, Ottowa, Canada.
Secretary: E. R. Lake, 2033 Park rd., N. W., Washington, D. C.
Treasurer: L. R. Taft, East Lansing Mich.

American Retail Nurserymen's Protective Association.
Secretary Guy A. Bryant, Princeton, Ill.
Meets annually in June.

American Rose Society.
President: Benjamin Hammond, Beacon, N. Y.
Vice-president: William L. Rock, Kansas City, Mo.
Secretary: E. A. White, Ithaca, N. Y.
Treasurer: Harry O. May, Summit, N. J.

American Seed Trade Association.
President: F. W. Bolgiano.
Vice-president: W. G. Scarlett.
Secretary-Treasurer: C. E. Kendel, 2010 Ontario St., Cleveland, Ohio.
Meets in June.

American Society for Horticultural Science.
President: T. C. Johnson, Virginia Truck Exp. Sta., Norfolk, Va.
Secretary-Treasurer: C. P. Close, College Park, Md.
Meets at Pittsburg, Pa.

American Society of Landscape Architects.
President: James Sturgis Pray, Cambridge, Mass.
Vice-president: Harold A. Caparn, New York.
Secretary: Alling S. DeForest, 222-225 Sibley Block, Rochester, N. Y.

American Society of Landscape Achitects.
President: James S. Pray, 50 Garden St., Cambridge, Mass.
Vice-president: Harod A. Caparn, 220 West 42d St., New York City.
Secretary: Alling S. DeForest, 222 Sibley Block, Rochester, N. Y.
Treasurer: Henry V. Hubbard, 101 Tremont St., Boston, Mass.
Meets each January in New York City and in February in Boston.

American Society of Naturalists.
President: Prof. George H. Shull.
Vice-president: Prof. Leon J. Cole.
Secretary: Prof. Bradley M. Davis, University of Pennsylvania, Philadelphia, Pa.
Treasurer: Dr. J. Arthur Harris.
Meets annually.

American Sweet Pea Society.
President: Geo. E. Kerr, Philadelphia, Pa.
Vice-president: Edwin Jenkins, Lenox, Mass.
Secretary: Wm. Gray, Bellevue ave., Newport, R. I.
Treasurer: Wm. Sim, Cliftondale, Mass.

Association of American Agricultural Colleges and Experiment Stations.
Secretary J. L. Hills, Burlington, Vermont.

Botanical Society of America.
President: F. C. Newcombe, University of Michigan, Ann Arbor, Mich.
Vice-president: Edgar W. Olive, Brooklyn (N. Y.) Botanic Garden.

Secretary: H. H. Bartlett, University of Michigan.
Treasurer: E. W. Sinnott, Conn. Agri. College, Storrs, Conn.
Meets annually, between Christmas and New Year's.

California Almond Growers.
Secretary: J. C. Martin, Jr., Balboa Bldg., San Francisco.

California Almond Growers' Ass'n.
Secretary: T. C. Tucker, 311 California St., San Francisco, Cal.

California, Associated Dairymen of.
Secretary: S. N. Ayres, Hotel Sequoia, Fresno, Cal.

California Associated Raisin Co.
Secretary: F. A. Seymour, Fresno, Cal.

California Association of Nurserymen.
President: Max J. Crow, Gilroy, Cal.
Vice-president: J. E. Bergtholdt, New Castle, Cal.
Secretary-Treasurer: Harry W. Kruckeberg, Los. Angeles, Cal.
Meets annually in October.

California Fruit Growers' Exchange.
Secretary: P. J. Dreher, Los Angeles.

California Peach Growers' Ass'n.
Secretary: J. F. Niswander, Fresno, Cal.

California Prune and Apricot Growers.
Secretary: H. G. Coykendall, San Jose.

California Seed Growers' Ass'n.
President: J. M. Edmundson, San Jose.

California State Beekeepers' Ass'n.
Secretary: M. C. Richter, Modesto, Cal.

California Walnut Growers' Ass'n.
President: C. C. Teague, Santa Paula, Cal.
Vice-president: Ralph McNees, Whittier, Cal.
Secretary-Manager: C. Thorpe, Los Angeles, Cal.

Central California Berry Growers' Association.
President: Mark Grimes, Santa Clara, Cal.

Canadian Association of Nurserymen.
Secretary: C. C. R. Morden, Niagara Falls, Ont.

Canadian Horticultural Association.
President: J. A. Fraser, Prescot, Ont.
Vice-president: E. J. Hayward, 139 Roberval Ave., Montreal.
SecretaryTreasurer: J. Luck, 5 Macdonald Ave., Montreal.

Chrysanthemum Society of America.
President: Wm. W. Vert, Port Washington, N. Y.
Vice-president: E. A. Bause, Wickliffe, O.
Secretary: Chas. W. Johnson, 2242 W. 109th St., Chicago, Ill.
Treasurer: John N. May, Summit, N. J.

College Florists' Organization of the S. A. F.
Temporary President: Prof. E. A. White, Cornell, Ithaca, N. Y.
Temporary Secretary: W. W. Ohlweiler, Missouri Botanical Garden, St. Louis, Mo.

Connecticut Horticultural Society.
President: G. H. Hollister, 272 Westland St., Hartford.
Vice-president: Francis Roulier, 1107 Asylum Ave., Hartford.
Secretary: Alfred Dixon, 670 Main St., Hartford.
Treasurer: W. W. Hunt, 80 Ann St., Hartford.
Meets second and fourth Fridays of each month excepting July and August.

Connecticut Nurserymen's Ass'n.
President: F. S. Baker, Cheshire.
Vice-president: E. F. Brainerd, Thompsonville.
Secretary: F. L. Thomas, Hall & Lewis Bldg., Merlden.
Treasurer: W. W. Hunt, 80 Ann St., Hartford.
Meets at call of president, annually in February.

Dahlia Society of California.
President: T. A. Burns, San Francisco.
Vice-president: Pierson Durbrow, San Francisco.
Secretary: C. S. Quick, 1508 Le Roy Ave., Berkeley, Cal.
Treasurer: F. C. Burns, San Rafael, Cal.
Meets third Friday in each month.

Eastern Fruit Growers' Association.
Secretary: N. T. Frame, Martinsburg, W. Va.

Eastern Nurserymen's Association.
Secretary: Wm. Pitkin, Rochester, New York.

Florida State Horticultural Society.
President: H. Harold Hume, Glen St. Mary, Fla.
Secretary: Bayard F. Floyd, Gainesville, Fla.
Treasurer: W. S. Hart, Hawks Park, Fla.
Meets usually in April or May.

Florists' Hail Association of America.
President: E. G. Hill, Richmond, Ind.

Vice-president: J. F. Ammann, Edwardsville, Ill.
Secretary: John G. Esler, Saddle River, N. J.
Treasurer: Jos. Heacock, Wyncote, Pa.

Florists' Telegraph Delivery.
President: W. F. Gude, Washington, D. C.
Vice-president: Philip Breitmeyer, Breitmeyer Sons, 26 Broadway, Detroit, Mich.
Secretary: Albert Pochelon, Detroit, Mich.
Treasurer: W. L. Rock, Kansas City, Mo.

Georgia-Florida Pecan Growers' Association.
President: R. B. Small, Columbus, Ga.
Vice-president: C. S. Parker, Thomasville, Ga.
Secretary-Treasurer: W. M. Parker, Thomasville, Ga.
Meets annually in Thomasville, Ga.

Georgia State Horti. Society.
President: R. C. Berckmans, Augusta, Ga.
Vice-president: B. W. Hunt.
Treasurer: J. B. Wright.
Secretary: T. H. McHatton, College of Agriculture, Athens, Ga.

Gladiolus Society of Ohio.
President: C. B. Gates, Mentor, Ohio.
Vice-president: Joe Coleman, Wayland, Ohio.
Secretary-Treasurer: Wilbur A. Christy, 315 N. Tod Ave., Warren, Thio.
Meets annually about Aug. 15.

Illinois State Florists' Association.
President I. L. Pillsbury, Galesburg.
Vice-presidents: W. J. Keimel, Elmhurst; H. W. Buckbee, Rockford; John Staack, Moline: Chas. Loveridge, Peoria; Geo. W. Jacobs, Canton; E. W. Guy, Belleville; W. J. Heimbrecker, Springfield.
Secretary: J. F. Ammann, Edwardsville.
Treasurer: F. L. Washburn, Bloomington.
Date of annual meeting for 1918, second Tuesday in March.

Illinois State Horticultural Society.
President: A. W. Brayton, Mt. Morris.
Vice-president: J. R. Reasoner, Urbana.
Secretary: A. M. Augustine, Norma.
Treasurer: J. W. Stanton, Richview.

Indiana Horticultural Society.
President: F. J. Heacock, Salem.
Vice-president: C. G. Woodbury, La Fayette.
Secretary-Treasurer: Frank I. Odell, Cannelton.
Meets semi-annually.

Indiana, State Florists' Association of.
President: Irwin Bertermann, Indianapolis.
First Vice-president: Herman Junge, Indianapolis.
Second Vice-president: Fred G. Heinl, Terre Haute.
Secretary: O. E. Steinkamp, 3800 Rookwood Ave., Indianapolis.
Treasurer: Chas. G. Pahud, Indianapolis.
Meets first Tuesday in the month.
Annual meeting, 1918, Tuesday, Jan. 8, at Claypool Hotel, Indianapolis.

International Apple Shippers' League.
President: E. W. J. Hearty, 40 Central St., Boston, Mass.
Vice-president: M. O. Baker, 139 S. Huron St., Toledo, O.
Secretary: R. G. Phillips, 522 Mercantile Bldg., Rochester, N. Y.
Treasurer: W. M. French, 204 Franklin St., New York City.

International Children's School Farm League.
47 W. 34th St., New York.

International Soc. of Arboriculture.
President: Wm. J. Palmer.
Secretary: J. P. Brown, Connersville, Ind.

Iowa Florists, Society of.
President: H. E. Lozier, Des Moines.
Vice-president: A. R. Smith, Boone.
Secretary: Wesley Greene, State House, Des Moines.
Meets last Wednesday in August.

Iowa, Northern, and Minnesota Florists' Organization.
President: F. C. Goodman, Mason City, Ia.

Secretary: A. N. Kinsman, Austin, Minn.
Meets annually.

Iowa State Horticultural Society.
President: W. B. Chapman, Correctionville.
Vice-president: G. H. Van Houten, Lenox.
Secretary and Librarian: Wesley Greene, Des Moines.
Treasurer: F. O. Harrington, Williamsburg.

Kansas State Horticultural Society.
President: A. L. Brooke, Grantville.
Vice-president: Geo. W. Holsinger, Rosedale.
Secretary: O. F. Whitney, Topeka.
Treasurer: F. W. Dixon, Holton.
Meets annually.

Kentucky Society of Florists.
President: Jos. Able, Jr.
Vice-president: L. Karl Gueltig.
Financial Secretary: Emil Walther.
Recording Secretary: August Baumer.
Treasurer: Frank Kleinsteuber.
Meets first Wednesday in each month at the shop of August Baumer in the Masonic Temple, Louisville, Ky., if none of the members proffer an invitation to the Society to meet at their own establishments. Annual election of officers at December meeting.

Kentucky State Horticultural Soc'y.
President: Dr. H. Van Antwerp, Farmers, Ky.
Secretary-Treasurer: N. R. Elliott, Lexington, Ky.

Ladies' Society of American Florists.
President: Mrs. Julius Roehrs, Rutherford, N. J.
Vice-president: Miss Bertha Meinhardt, St. Louis, Mo.
Secretary: Mrs. Geo. Smith, 606 Huron Rd., Cleveland, O.
Treasurer: Mrs. A. M. Herr, Lancaster, Pa.

Maine State Florists' Society.
President: J. H. Stalford.
Vice-president: C. S. Strout.
Secretary: R. T. Muller, Orono, Me.
Treasurer: E. Saunders.

Manitoba (Can.) Hort. and Forestry Association.
President: Geo. Batho, Publications Branch, Parliament bldgs., Winnipeg, Manitoba.
Secretary-Treasurer: Prof. F. W. Brodrick, Manitoba Agri. College, Winnipeg, Manitoba.

Maryland Agricultural Society.
President: Orlando Harrison, Berlin, Md.
Vice-president: Asa B. Gardiner (City Dairy Company), Baltimore, Md.
Secretary-Treasurer: T. B. Symons, College Park, Md.

Massachusetts Horticultural Society.
President: Richard M. Saltonstall.
Vice-presidents: Walter Hunnewell and Nathaniel T. Kidder.
Secretary: William P. Rich, Horticultural Hall, Boston.
Treasurer: Walter Hunnewell.

Massachusetts Nurserymen's Ass'n.
President: Edward W. Breed.
Vice-president: John Kirkegaard.
Secretary- Treasurer: W. H. Thurlow, West Newbury, Mass.
Meets annually, and usually one or two field meetings.

Michigan State Hort. Society.
President: Chas. A. Bingham, Birmingham, Mich.
Vice-president: James Nicol, So. Haven.
Secretary: Robt. A. Smythe, Benton Harbor.
Treasurer: Henry Smith, Grand Rapids.

Minnesota State Hort. Society.
President: Thos. E. Cashman, Owatonna.
Secretary: A. W. Latham, Minneapolis.
Treasurer: Geo. W. Strand, Taylor's Falls.
Meets at the West Hotel, Minneapolis.

Mississippi Nurserymen's Ass'n.
President: R. W. Bruce, Port Gibson, Miss.
Vice-president: J. R. Woodham, Newton, Miss.
Secretary: R. W. Harned, Agricultural College, Miss.
Meets at Agricultural College, Miss.

Mississippi Valley Apple Growers' Association.
President: L. C. Stark, Louisiana, Mo.
Secretary - Treasurer: James Handly, Quincy, Ill.
Meets monthly from May to October.

Missouri State Hort. Society.
President: H. C. Irish, St. Louis.
First Vice-president: E. H. Favor, St. Joseph.
Secretary: H. S. Wayman, Princeton.
Treasurer: Daniel Lowmiller, Parkville.

Missouri Valley Hort. Society.
Vice-president: Edwin Taylor, Edwardsville, Kan.
Secretary: George E. Rose, Rosedale, Kan.
Treasurer: Dan. Lowmiller, Parkville, Mo.
Meets the third Saturday of every month.

Montana Florists and Nurserymen's Association.
President: Victor Seigel, Columbia Gardens, Butte, Mont.
Vice-president: J. P. Ring, Helena, Mont.
Secretary-Treasurer: E. A. Caimettes, Helena, Mont.

National Apple Growers' Ass'n.
Secretary: Wm. Massey, Winchester, Va.

National Association of Gardeners.
President: Robt. Weeks, Cleveland, Ohio.
Vice-president: P. W. Popp, Mamaroneck, N. Y.
Secretary: M. C. Ebel, Madison, N. J.
Treasurer: Ernest Guter, Pittsburgh, Pa.

National Association of Marketing Officials.
President: Colonel Harris Weinstock, Director State Market Commission, San Francisco, Cal.
Secretary: Wm. R. Camp, Chief, Division of Markets, West Raleigh, N. C.

National Association of Retail Nurserymen.
President: Edward S. Osborne.
Vice-president: J. M. Pitkin.
Secretary - Treasurer: F. E. Grover, Rochester, N. Y.

National Canners' Association.
President: Henry Burden.
Vice-president: Frank Gerber.
Secretary-Treasurer: Frank E. Gorrei, 1739 H St., N. W., Washington, D. C.
Meets at Boston, Mass.

National Congress of Horticulture.
Secretary: Howard W. Selby, Springfield, Mass.

National Nut Growers' Association.
President: B. W. Stone.
Vice-president: Theo. Bechtel.
Secretary: Wm. P. Bullard, Albany, Ga.
Treasurer: Nath. Brewer.

National Pecan Growers' Exchange.
President: C. A. Van Duzer, Cairo, Ga.
Vice-president: B. W. Stone, Thomasville, Ga.
Secretary-Treasurer: Wm. P. Bullard, Albany, Ga.

Nebraska State Florists' Society.
President: Ed. Williams, Grand Island, Neb.
Secretary: Lewis Henderson, 1519 Farnam St., Omaha, Neb.
Treasurer: Charles Greene, Fremont, Neb.

New England Nurserymen's Association.
President: A. P. Horne, Manchester, N. H.
Vice-president: W. W. Hunt, Hartford, Conn.
Secretary: Daniel A. Clarke, Fiskeville, R. I.
Treasurer: V. A. Vanicek, Newport, R. I.

New Jersey Association of Nurserymen.
President: J. T. Lovett, Little Silver, N. J.
Vice-president: Carl H. Fiemmer, Springfield, N. J.
Secretary - Treasurer: A. F. Meisky, Elizabeth, N. J.

New York State Federation of Horticultural Societies and Floral Clubs.
President: Frank R. Pierson, Tarrytown, N. Y.
First Vice-president: Dr. E. A. Bates, Syracuse.
Second Vice-president: Hugh McCarthy, Syracuse.
Third Vice-president: C. N. Vick, Rochester, N. Y.
Fourth Vice-president: Anton Schultheis, College Point, L. I., N. Y.
Fifth Vice-president: F. A. Danker, Albany.
Secretary: E. A. White, Cornell, Ithaca, N. Y.
Treasurer: W. A. Adams, Buffalo, N. Y.
Meets four times each year.

New York State Nurserymen's Association.
President: Edward S. Osborn, Rochester, N. Y.
Secretary: W. L. Glen, Wall St., Rochester, N. Y.
Treasurer: Horace Hooker, 57 Trust Bldg., Rochester, N. Y.

New York State Vegetable Growers' Association.
President: S. J. Cook, Silver Creek, N. Y.
Vice-president: E. R. Hay, Clyde, N. Y.
Secretary: Paul Work, Cornell, Ithaca, N. Y.
Treasurer: H. J. Reeve, Mattituck, N. Y.

North Dakota State Horticultural Society.
President: Prof. C. B. Waldron, Fargo, N. D.

Secretary-Treasurer: C. A. Chinberg, Hankinson, N. D.

Northern Nurserymen's Ass'n.
President: J. M. Underwood.
Vice-president: E. A. Smith.
Secretary-Treasurer: R. D. Underwood, Jewell Nursery Co., Lake City, Minn.

Northern Nut Growers' Association.
President: W. C. Reed, Vincennes, Ind.
Vice-president: W. N. Hutt, Raleigh, N. C.
Secretary-Treasurer: Dr. W. C. Deming, Georgetown, Conn.
Meets annually.

Ohio Nurserymen's Association.
Secretary: W. B. Cole, Painesville, O.

Oklahoma Nurserymen's Ass'n.
President: P. W. Vaught, Holdenville, Okla.
Secretary: James Parker, Tecumseh, Okla.

Oklahoma State Florists' and Ornamental Horticultural Ass'n.
President: A. S. Gray, Chickasha, Okla.
Vice-president: J. W. Horn, Oklahoma City, Okla.
Secretary-Treasurer: W. K. Cheatham, Oklahoma City, Okla.

Oklahoma State Hort. Society.
President: John Colemon, Aline.
Vice-president: J. A. Farquharson, Guthrie.
Secretary: F. M. Roefs, Stillwater.
Treasurer: E. A. Kissick, Yukon.

Ontario (Can.) Fruit Growers' Association.
President: Dr. A. J. Grant, Thedford.
Vice-president: F. A. J. Sheppard, St. Catherines.
Secretary-Treasurer: P. W. Hodgetts, Toronto.

Ontario (Can.) Gardeners and Florists' Association.
Honorary President: Sir H. M. Pellatt.
President: L. Whytock.
First Vice-president: George Thompson.
Second Vice-president: T. J. Gould.
Secretary: Geo. Douglas, 309 Merton St., Toronto, Ont.
Treasurer: Geo. Mills.
Meets third Tuesday in each month at St. George's Hall, Elm St., Toronto, Ont. Annual election of officers at November meeting.

Orchid Importers' Association.
President: John E. Lager, Summit, N. J.
Vice-president: Julius Roehrs, Rutherford, N. J.
Secretary-Treasurer: G L. Freeman, Fall River, Mass.

Oregon-Washington Association of Nurserymen.
President: C. F. Breithaup, Richland, Wash.
Secretary: C. A. Tonneson, Tacoma, Wash.

Pacific Coast Nurserymen's Ass'n.
President: F. A. Wiggins, Toppenish, Wash.
Secretary-Treasurer: C. A. Tonneson, Tacoma, Wash.

Pear Growers' Association (of California).
Secretary: Frank Swett, Martinez, Cal.

Pennsylvania Horticultural Society at Philadelphia.
President: C. Hartman Kuhn, Liberty Building, Philadelphia.
Vice-presidents: Dr. Robt. Huey, 330 S. 15th St., Philadelphia; Henry F. Michell, 518 Market St., Philadelphia; Robt. Craig, 49th and Market Sts., Philadelphia; William Kleinheinz, Ogontz, Pa.
Secretary: David Rust 606 Finance Bldg., Philadelphia.
Treasurer: S. W. Keith, Morris Bldg., Philadelphia.
Meets third Tuesday of each month; lecture course November to April.
Date of annual meeting for December. Plants, flowers, fruits, vegetables. Promotion of Horticulture.

Pennsylvania Nurserymen's Ass'n.
President: William Warner, Chestnut Hill, Philadelphia, Pa.
Vice-president: Edward W. Thomas, King-of-Prussia, Pa.
Secretary: Henry T. Moon, Morrisville, Pa.
Treasurer: Thomas Rakestraw, Kennett Square, Pa.

Pennsylvania, State Horticultural Association of.
President: W. J. Lewis, Pittston, Pa.
First Vice-president: Geo. W. Kessler, Tyrone, Pa.
Secretary: H. F. Hershey, Gettysburg, Pa.
Treasurer: Edwin W. Thomas, King of Prussia, Pa.
Meets annually.

Potato Association of America.
President: L. D. Sweet, Food Administration, Washington, D. C.
Vice-president: J. G. Milward, Wisconsin Exp. Sta., Madison, Wis.
Secretary-Treasurer: Wm. Stuart, Dept. of Agri., Washington, D. C.

Railway Gardening Association.
President: J. S. Butterfield.
Secretary: Charles E. Lowe, Pennsylvania R. R. Lines West, 215 Jarvella St., Pittsburgh, Pa.
Treasurer: J. K. Wingert.

Rhode Island Horticultural Society.
President: H. H. York, Providence, R. I.
Vice-president: John Hill, Providence.
Secretary: Ernest K. Thomas, R. I. State College, Kingston, R. I.
Treasurer: H. L. Madison, Providence.
Meets third Wednesday each month.

School Garden Ass'n of America.
President: Van Evrie Kilpatrick.
Secretary: E. Ruth Pyrtle, Lincoln, Neb.
Treasurer: John L. Randall, Bureau of Education, Washington, D. C.
Meets annually, with National Educational Association.

Society for the Promotion of Agricultural Science.
President: Herbert Osborn, Columbus, O.
Vice-president: Wm. D. Brooks, Amherst, Mass.
Secretary-Treasurer: C. P. Gillette, Fort Collins, Colo.

Society of American Florists and Ornamental Horticulturists.
President: Chas. H. Totty, Madison, N. J.
Vice-president: Jules Bourdet, St. Louis, Mo.
Secretary: John Young, 53 W. 28th St., N. Y. City.
Treasurer: J. J. Hess, Omaha, Neb.

Society of Horticultural Scientists
Secretary: C. P. Close, College Park, Md.

Southern Nurserymen's Association.
President: O. W. Fraser, Birmingham, Ala.
Vice-president: H. C. Caldwell, Atlanta, Ga.
Secretary-Treasurer: O. Joe Howard, Pomono, N. C.

Tennessee State Florists' Ass'n.
President: W. C. Johnson, Memphis, Tenn.
Vice-president: Leon Geny, Nashville, Tenn.
Secretary-Treasurer: G. M. Bentley, University of Tennessee, Knoxville, Tenn.

Tennessee State Fruit Growers' Association.
President: J. A. Pruett, Union City.
Secretary-Treasurer: O. M. Watson, Knoxville.

Tennessee State Nurserymen's Association.
President: Col. George Poague, Graysville.
Secretary-Treasurer: Prof. G. M. Bentley, Knoxville.

Texas Nurserymen's Association.
President: W. C. Griffing, Port Arthur, Texas.
Vice-president: J. M. Ramsey, Austin, Texas.
Secretary-Treasurer: John S. Kerr, Sherman, Texas.

Texas State Florists' Association.
President: W. J. Baker, Fort Worth, Tex.
Vice-president: O. H. Hannah, Sherman. Tex.
Secretary-Treasurer: L. J. Tackett, Ft. Worth, Tex.

Vegetable Growers' Association of America.
President: Howard W. Selby, Springfield, Mass.
Vice-president: C. W. Waid, E. Lansing, Mich.
Secretary: Sam W. Severance, Louisville, Ky.
Treasurer: Eugene Davis, Grand Rapids, Mich.
Meets annually.

Vegetable Growers' Association of Western New York.
President: Albert S. Goff, Lake Placid.
Vice-president: Leon G. Thornton, Lyons.
Secretary: A. R. Williams, Rochester.
Treasurer: Harry F. Carpenter, Pittsford.

Vermont State Hort. Society.
President: E. H. West, Dorset, Vt.
Secretary: M. B. Cummings, Burlington, Vt.
Treasurer: W. C. Colton, Montpelier.
Meets December 4-7, 1917, at Burlington, Vt.

Western Ass'n of Nurserymen.
President: E. M. Sherman, Charles City, Ia.

Vice-president: W. C. Reed, Vincennes, Ind.
Secretary-Treasurer: Geo. W. Holsinger, Rosedale, Kans.

Western New York Horticultural Society.
President: Seth J. T. Bush, Morton, N. Y.
Secretary-Treasurer: John Hall, 204 Granite Bdg., Rochester, N. Y.

Wholesale Grass Seed Dealers' Association.
President: A. E. Reynolds, Crawfordsville, Ind.
Vice-president: C. C. Massie, Minneapolis, Minn.
Secretary-Treasurer: John A. Smith, Toledo, O.

Wholesale Seedsmen's League.
President: F. W. Bruggerhof, New York.
Vice-president: L. W. Bowen, Detroit, Mich.
Secretary - Treasurer: Burnet Landreth, Bristol, Pa.

Wild Flower Preservation Society.
President: Mrs. Charles L. Hutchinson.
Secretary-Treasurer: Mrs. Henry G. Gale.
Meets semi-annually in October and April.

Wild Flower Preservation Society of America (Chicago Chapter).
President: Mrs. Lyman A. Walton.
Secretary-Treasurer: Dr. C. F. Millspaugh, Dept. of Botany, Field Museum of Natural History, Chicago.
Field Marshal: Mrs. C. B. Cory.

Wild Flower Preservation Society of America.
President: C. F. Millspaugh.
Secretary-Treasurer: Norman Taylor, Broolyn Botanic Garden, Brooklyn, N. Y.
Meets irregularly.

Woman's National Farm and Garden Association.
President: Mrs. Francis King, Alma, Mich.
Secretary: Miss Hilda Loines, 600 Lexington Ave., New York City.
Treasurer: Miss Louisa G. Davis, Ambler, Pa.

Local Clubs and Societies

Albany (N. Y.) Florists' Club.
President: Earl Shaw.
Vice-president: Wm. Newport.
Secretary - Treasurer: Robert Davidson, 139 Second St., Albany, N. Y.
Meets first Thursday in the month at 611-613 Broadway, Albany, N. Y.

Associated Retail Florists, Inc.
President: Marshall Clarke.
Vice-president: William Phillipps.
Secretary: Wm. H. Siebrecht, Jr., Queens Plaza Court, Long Island City, New York City.
Treasurer: Geo. E. M. Stumpp.
Meets third Tuesday each month.

Baltimore (Md.) Gardeners and Florists' Club.
President: Fred C. Bauer.
Vice-president: John Nuth.
Financial Secretary: George Talbot.
Treasurer: Fred G. B. Burger.
Meets second and fourth Monday in each month at Florists' Exchange Hall, St. Paul and Franklin Sts., Baltimore, Md.
Annual election of officers first meeting in March.

Binghampton (N. Y.) Florists' Association.
President: Wm. Schmeiske.
Vice-president: A. A. Thomas.
Secretary - Treasurer: A. M. Fancher, Riverside Gardens, Binghampton.
Meets first Tuesday of each month.

Boston (Mass.) Gardeners and Florists' Club.
President: James Methven.
Vice-president: A. K. Rogers.
Secretary: William N. Craig, Faulkner Farm, Brookline, Mass.
Treasurer: Samuel J. Goddard.
Meets third Tuesday evening in each month except July and August, at Horticultural Hall.
Dec. 18, 1917, annual election; Jan. 15, 1918, annual installation. Meetings held at Horticultural Hall, Boston.

Bridgeport (Conn.) Florists' Club.
President: Carl C. Reck.
Vice-president: Gus Herthal.
Secretary: Stephen D. Horan, 943 Main St.
Treasurer: C. Lewis Bill.
Meets monthly.

Buffalo (N. Y.) Florists' Club.
President: Henry Elbers.
Vice-president: Mark Palmer.
Secretary: William Legg, 889 W. Delavan Ave.
Financial Secretary: O. Klingimeier.
Treasurer: E. Stroh.
Meets first Tuesday each month, General Electric Bldg.

Chicago (Ill.) Florists' Club.
President: Wm. H. Amling.

Vice-president: Paul R. Klingsporn.
Secretary: A. J. Zech, 30 E. Randolph St.
Treasurer: Otto H. Ambling.
Meets first Thursday after first Monday of each month.

Chicago Flower Growers' Ass'n.
President: Ed. H. Meuret.
Vice-president: Fred Schramm.
Secretry: Fred Stielow.
Treasurer: Chas. McCauley.
Meets second Tuesady in each month at 182 N. Michigan Ave., Chicago, Ill. Annual election of officers in July.

Chicago (Ill.) Horticultural Society.
President: Willis N. Rudd.
First Vice-president: J. C. Vaughan.
Second Vice-president: Ernst Wienhoeber
Secretary: L. M. McCauley.
Treasurer: N. H. Carpenter.

Cincinnati (O.) Florists' Society.
President: Wm. Schuman.
Vice-president: James Allen.
Secretary: Alex. Ostendarp, 16 E. Third St.
Treasurer: J. Chas. Murphy.
Meets Second Monday each month at Hotel Gibson.

Cleveland (O.) Florists' Club.
President: Carl Hagenberger.
Vice-president: F. C. W. Brown.
Secretary: James M. Laughlin, 221 Huron Rd.
Treasurer: A. C. Fox.
Meets first Monday night each month at Hollenden Hotel.

Columbus (O.) Florists' Association.
President: Alfred C. Hottes.
Vice-president: Walter Stephens.
Secretary: E. A. Munk, Sta. A., Columbus.
Treasurer: Walter J. Engel.
Meets every second and fourth Monday of the month.

Columbus (O.) Hort. Society.
President: Prof. W. Paddock, Ohio State University.
Vice-president: S. Derby.
Secretary: L. M. Montgomery.
Treasurer: W. C. Mills.

Danville (Ill.) Florists' Club.
President: Herbert E. Smith.
Vice-president: Peter Britz.
Secretary: Joseph J. Smith.
Treasurer: Chas. C. Walker.
Meets first Monday in each month at the members' places of business. Annual election of officers in January.

Dayton Florists and Gardeners' Association.
President: Horace M. Frank.
Vice-president: Elmer Brame.
Secretary: E. E. Schaefer, 3010 W. Third St.
Treasurer: J. W. Rodgers.
Meets first Tuesday of every month at Y. M. C. A. Building, Dayton, O. Annual election of officers at March meeting.

Detroit (Mich.) Florist Club.
President: Edward A. Fetters.
Vice-president: Albert Stahelin.
Secretary: Henry C. Forster, 17 E. Adams Ave.
Treasurer: Robt. Rahaby.
Meets second Thursday of each month.

Essex County (N. J.) Florists' Club.
President: John Pfeuffer.
Vice-president: James McLaughlin.
Secretary: John Edward Jacobi, Clinton Ave., Irvington, N. J.
Treasurer: Edwin Peisson.
Meets second Thursday each month at 387 Elizabeth Ave., Newark, N. J.

Fort Wayne Florists' Association.
President: Ed. Wenninghoff.
Secretary: Miss Marguerite Flick, Flick Floral Co.
Treasurer: Herman Leitz.

Gardeners' Union of Lewiston and Auburn, Me.
President: Willard A. Noyes.
Vice-president: L. B. Morrell.
Secretary: Mrs. Geo. A. Whitney, 151 Winter St., Auburn Me.
Treasurer: Chas. Goss.
Meets the first Friday of every month.

Greek-American Florists' Ass'n.
President: C. Sakelos.
Vice-president: P. Theophine.
Treasurer: G. Rondires.
Secretary: C. Thomas.
Assistant Secretary: M. Andriopulos, 58 West 28th St., New York City.

Grosse Pointe and Eastern Michigan Horticultural Society.
President: Thos. Connor.
Vice-president: John Bain.
Secretary: J. J. de Carteret, 259 Lake Shore Road, Grosse Pointe, Mich.
Treasurer: A. Jackson.
Meets first Wednesday of each month at Neighborhood Club, Oak St., Grosse Pointe.

Hartford (Conn.) Florists' Club.
President: Joseph F. Coombs.
Vice-president: Joseph McManus.
Secretary: Alfred Dixon, 670 Main St.

Treasurer: W. W. Thomson.
Meets monthly.

Highgrove (Cal.) Orange Growers' Association.
Secretary: H. C. Merrifield, Highgrove, Cal.

Holyoke and Northampton (Mass.) Florists and Gardeners' Club.
President: Geo. Strugnel.
Vice-president: H. E. Downer.
Secretary - Treasurer: James Whiting, French Hall, Mass. Agri. College., Amherst.
Meets first Tuesday of each month at the members' places of business.

Houston (Texas) Florists' Club.
President: H. H. Kuhlmann, Jr.
Vice-president: Paul M. Carroll.
Secretary: Clarence L. Brock, P. O. Box 1492.
Treasurer: W. Westgate.
Meets first Monday in each month.

Knoxville (Tenn.) Florists' Society.
President: William R. Ryno.
Vice-president: Mrs. Edith Goetz.
Secretary-Treasurer: Robt. E. Mapes, care of Baums, Knoxville.
Meets second Monday evening of each month.

Lancaster County (Pa.) Florists' Association.
President: H. A. Schroyer.
Vice-president: Willis B. Girvin.
Secretary: F. L. Kohr.
Treasurer: H. H. Rohrer.
Meets third Thursday in every month.

Lenox Horticultural Society.
Secretary: Harry Heeremans, Lenox, Mass.
Meets second Wednesday every month.

Lewiston and Auburn (Me.) Gardeners' Union.
Mrs. Geo. A. Whitney, Auburn, Secretary.

Milwaukee Florists' Club.
President: Wm. Kennedy.
Vice-president: Henry Kummer.
Secretary: William Oestricher.
Treasurer: James Livingston.
Meets first Thursday in each month at Kurz Bros. Hall, Milwaukee, Wis. Annual election of officers at December meeting.

Monmouth County (N. J.) Horticultural Society.
President: James Kennedy.
Vice-president: John Jacobs.
Secretary: H. A. Kettel, Fair Haven, N. J.
Treasurer: Wiliam Metzdorf.
Meets third Thursday in each month, at Eks Home, Front St., Red Bank.

Montreal (Can.) Gardeners and Florists' Club.
President: William Cotter.
Vice-president: Richard Scott.
Secretary-Treasurer: W. H. Horobin, 283 Marquette St.
Meets first Monday every month.

Morris County (N. J.) Gardeners and Forists' Society.
President: Frank Breare.
Vice-president: David Francis.
Secretary: Edward Reagan, Morristown.
Treasurer: Wm. H. Duckham.
Meets second Wednesday each month, except July and August.

Nassau County (N. Y.) Horticultural Society.
President: James McCarthy.
Vice-president: James Gladstone.
Corr. Secretary: Harry Goodband, Glen Cove, N. Y.
Treasurer: Ernest J. Brown.
Meets second Wednesday in each month.

New Haven County (Conn.) Horticultural Society.
President: Wm. J. Rathgeber.
Vice-president: Geo. A. Cromie.
Treasurer: David Kydd.
Secretary: W. C. McIntosh, 925 Howard Ave., New Haven, Conn.

New London (Conn.) Horticultural Society.
President: J. D. Rough.
Vice-presidents: Thos. Halton and James Eckford.
Secretary: Stanley Jordan, Waterford, Conn.
Treasurer: Simon L. Ewald.
Meets second Thursday of each month.

New Orleans (La.) Horticultural Society.
President: Elmer Farley.
Vice-president: Peter Ackermann.
Secretary: Richard Elchling, 1126 Aline St.
Treasurer: John Eblen.
Meets every third Thursday in the month.

Newport (R. I.) Hort. Society.
President: Frederick Carter.
First Vice-president: Arthur C. Potter.
Second Vice-president: C. M. Boghoglt.
Secretary: Fred P. Webber, Aquidneck P. O., Newport.
Treasurer: Rich. Gardner.
Meets second and third Tuesday of each month.

New Tier Horticultural Society, Winnetka, Ill.
President: Hugh Noble.
Vice-president: Julian Runnfeldt.
Secretary-Treasurer: Ed Boulter.
Meets monthly.

New York and New Jersey Association of Plant Growers.
President: John H. Fresser.
Vice-president: T. W. Langan.
Secretary: Wm. H. Siebrecht, Jr., Queen's Plaza Court, Long Island City, N. Y.
Treasurer: H. C. Steinhoff.
Meets second Monday of each month.

New York Florists' Club.
President: Geo. E. M. Stumpp.
Vice-president: J. H. Fiesser.
Secretary: John Young, 53 West 28th St., New York, N. Y.
Treasurer: Wm. C. Rickards, Jr.
Meets second Monday in each month at the Grand Opera House Building, N. W. corner Eighth Ave. and 23rd St., New York N. Y. Annual election of officers at December meeting.

New York, Horticultural Society of.
President: T. A. Havemeyer.
Vice-president: N. L. Britton.
Secretary: Geo. V. Nash, Mansion, New York Botanical Gardens, Bronx Park, N. Y. City.
Treasurer: Fred'k. R. Newbold.

New York Wholesale Cut Flower Protective Association.
President: Frank H. Traendly.
First Vice-president: W. S. Allen.
Second Vice-president: J. S. Fenrich.
Secretary and Manager: Ward W. Smith.
Treasurer: E. C. Horan.
Meets first Friday in each month at the Breslin Hotel, New York City. Annual election of officers in December.

Northern Westchester (N. Y.) Horticultural and Agricultural Society.
President: Marshall Crissman.
Vice-president: Eddie Cullam.
Secretary: W. E. Mattison, Mt. Kisco.
Treasurer: Edward Heller.
Meets third Thursday of each month.

Omaha and Council Bluffs Florists' Club.
President: F. Lainson.
Vice-president: Geo. Sorenson.
Secretary: L. Henderson 1519 Farnam St., Omaha, Neb.
Treasurer: Henry Meyer.
Meets second Thursday in each month at the Court House, Omaha, Neb. Annual election of officers at September meeting.

Orange (N. J.) Floricultural Soc'y.
President: Jos. A. Manda.
Vice-president: Rev. L. H. Lighthipe.
Secretary: Geo. W. Strange.
Treasurer: Edw. A. Manda.
Meets first Monday in each month at the Jr. O. U. A. M., Orange, N. J. Annual election of officers at December meeting.

Oyster Bay (N. Y.) Horticultural Society.
President: William Eccles.
Vice-president: Frank Gale.
Secretary: Geo. H. Hale, Oyster Bay.
Treasurer: John T. Ingram.
Meets every fourth Wednesday.

Pacific Coast Horticultural Society.
President: M. A. Pos.
Vice-president: Thomas Fenton.
Secretary: Walter A. Hofinghoff, 414 Mason N. S. G. W. Bldg., Diablo Hall, San Francisco, Cal.
Treasurer: B. Meyer.
Meets first Saturday in the month.

Pasadena Horticultural Society.
Secretary: Geo. B. Kennedy, Pasadena, Cal.
Meets first and fourth Friday every month.

Paterson (N. J.) Floricultural Society, Inc.
President: Joseph M. Ackerman.
Vice-president: William Blair.
Secretary: Sebastian Hubschmith, 167 Dewey Ave., Totowa Boro, N. J.
Treasurer: Andrew N. Bardner.
Meets first Tuesday each month at Y. M. C. A. Bldg.

Peninsula Horticultural Society.
President: Samuel L. Byrn, Cambridge, Md.
Vice-president: Warren Newton, Bridgeville, Del.
Secretary - Treasurer: Wesley Webb, Dover, Del.
Meets annually alternately in Delaware and Maryland.

Peoria (Ill.) Florists' Association.
President: Chas. Loveridge.
Vice-president: L. J. Becker.
Secretary-Treasurer: James Cole, 431 Main st., Peoria.

Philadelphia, Florists' Club of.
President: Adolph Farenwald, Roslyn, Pa.
Vice-president: David E. Colflesh.
Secretary: Fred Cowperthwaite, 530 Widener Bldg., care Lord & Burnham Co. Philadelphia.
Treasurer: Geo. Craig.
Meets first Tuesday each month, in Parkway Bldg., Broad and Cherry Sts.

Pittsburgh Florists and Gardeners' Club.
President: Carl Becherer.
Vice-president: E. C. Reineman.
Secretary: E. J. McCallum, care the McCallum Co., 137-7th St., Pittsburgh.
Assistant Secretary: W. A. Clark.
Treasurer: T. P. Langhans.
Meets first Tuesday in each month at Fort Pitt Hotel, Pittsburgh, Pa. Annual election of officers at February meeting.

Portland (Ore.) Floral Society.
President: E. J. Steele.
Vice-president: Guy Pilkington.
Secretary: H. Nicklas, 403 Morrison St., Portland.
Treasurer: R. E. Gehr.
Meets third Tuesday of each month.

Reading Florists' Association.
President: Stanley Giles.
Vice-president: H. C. Huesman.
Secretary - Treasurer: F. H. Lauck.
Meets second and fourth Thursday in each month in the Moore Building, 5th and Penn Sts., Reading, Pa. Annual election of officers in December.

Rhode Island, Florists and Gardeners' Club of.
President: James Dillon.
Vice-president: Wm. Steel.
Secretary: William E. Chappell, Providence, R. I.
Treasurer: James Hockey.
Meets first Thursday in each month.

Rochester (N. Y.) Florists' Association.
President: H. B. Stringer.
Vice-president: Fred Thomann.
Secretary: Ambrose H. Secker, 357 Linden St., Rochester,
Treasurer: Geo. T. Boucher.
Meets second Monday of each month.

St. Louis (Mo.) Association of Gardeners.
President: L. P. Jensen.
First Vice-president: Geo. H. Pring.
Secretary: Hugo M. Schaff, 4646 Alaska Ave.
Treasurer: Ernest Steehle.
Meets first Wednesday of each month.

St. Louis (Mo.) Florists' Club.
President: L. Jules Bourdet.
Vice-president: A. H. Hummert.
Secretary: J. J. Windler, Grand and Shenandoah Aves.
Treasurer: Wm. C. Smith.
Meets every second Thursday of the month.

St. Louis Retail Florists' Ass'n.
President: Fred H. Weber.
Secretary: Theo. Miller.
Treasurer: Fred C. Weber, Jr.
Meets third Monday of each month.

San Antonio (Texas) Florists' Club.
President: Chris. Hauser.
Vice-president: Frank Suchy.
Secretary: F. Freeborough.
Treasurer: Chas. Albrecht.

Schnectady (N. Y.) Florists' Club.
President: G. E. Kopper.
Vice-president: G. W. Matthews.
Secretary: H. E. Eberhardt.
Treasurer: W. E. John.

Sewickley (Pa.) Hort. Society.
President: John Barnet.
Vice-president: Arthur E. Bonsey.
Secretary: John Carman, Sewickley.
Treasurer: William Thomson, Jr.
Meets second Tuesday in every month.

Southampton (N. Y.) Horticultural Society.
President: Charles F. Guilloz.
Vice-president: Willam McLeod.
Secretary: Herbert H. Wells, Southampton.
Treasurer: George H. Campbell.
Meets first Thursday in each month.

Spokane (Wash.) Florists' Club.
Secretary: John W. Duncan, 504 City Hall, Spokane.

Springfield (O.) Florists' Club.
President: Frank E. Good.
Vice-president: George H. Mellen.

Secretary: Arthur J. Todd.
Treasurer: Clifford Paden.
Meets on call of president. Date of annual meeting for 1918, during December.

Stamford (Conn.) Hort. Society.
President: Henry Wild.
Vice-president: Anton Pederson.
Secretary: Owen A. Hunwick, The Uplands, Strawberry Hill, Stamford, Conn.
Treasurer: Edward Davey.
Meets second Friday of each month, at Moose Hall, Stamford, Conn.

Syracuse (N. Y.) Florists' Club.
President: Werner Bultmann.
Vice-president: H. Burt.
Secretary-Treasurer: L. E. Mulhauser, 1703 Court St.
Meets first Monday in the month at Werner Bultmann's Flower Shop, 151 James St. Annual election of officers in November.

Syracuse (N. Y.) Rose Society.
President: Rev. Edmund M. Mills.
First Vice-president: Mrs. F. R. Hazard.
Secretary General: Dr. Earle A. Bates, Snow Bldg.
Treasurer: Geo. E. Thorpe.
Meets third Thursday of each month at the Rose Society room, Public Library Bldg., Syracuse.

Swedish Horticultural Society of America.
President: C. A. Peterson.
Vice-president: Axel Talm.
Secretary: Malkus Soderstrom, 37 Old Broadway, New York City.
Treasurer: E. A. Lundberg.
Meets Teutonia Assembly Rooms, 16th St. and Third Ave., New York City.
Annual meeting, 1918, second Saturday in December.

Tarrytown (N. Y.) Horticultural Society.
President: Joseph Bradley.
Vice-president: George McIntosh.
Secretary: Edward W. Neubrand, Tarrytown.
Treasurer: Andrew H. Brown.
Meets third Wednesday evening of each month except July, August and December.

Terre Haute (Ind.) Florists' Club.
President: Fred G. Heinl.
Vice-president: Henry Graham.
Secretary: N. B. Stover, 118 So. 6th St., Terre Haute, Ind.
Treasurer: Fred Wunker.
Meets first Thursday in January, April, July and November, in the Chamber of Commerce Bldg., Terre Haute, Ind. Annual election of officers at April meeting.

Toledo (O.) Florists' Club.
President: George Bayer.
Vice-president: Harry H. Heinl.
Secretary and Treasurer: John L. Shiller, 929 Prouty Ave.
Meets the first Tuesday in each month at 1518 Nicholas Bldg. Annual election of officers at August meeting.

Toronto (Ont., Can.) Gardeners and Florists' Association.
President: George Thompson.
Vice-president: Alex. Simpson.
Secretary: George Douglas, 309 Merton St.
Treasurer: George H. Mills.
Meets third Tuesday of each month.

Toronto (Ont., Can.) Horticultural Society.
President: P. H. Mitchell.
Vice-president: C. B. Hamilton.
Secretary: O. St. Geo. Freer, 136 Arlington Ave.
Treasurer: W. J. Evans.
Meets second Friday each month.

Toronto (Ont., Can.) Retail Florists' Club.
President: Geo. Geraghty.
Vice-president: S. A. Frost.
Secretary: B. L. Hill, 716 Yonge St., Toronto.
Treasurer: J. A. Neal.
Meets second Monday each month.

Tri City Florists' Club.
President: Arvid Anderson.
Secretary: Wm. Goos, Bettendorf, Iowa.
Treasurer: Wm. Knees, Sr.
Meets second Thursday of each month at homes of members.

Tuxedo (N. Y.) Hort. Society.
President: P. Cassidy.
Vice-president: Duncan McGregor.
Secretary: Thos. Wilson.
Treasurer: Alfred Townsend.
Meets first Wednesday of each month in Parish House, Tuxedo Park.

United States Florists.
President: Max Schling.
Secretary: L. W. C. Tuthill, 1133 Broadway, New York City.
Treasurer: Philip Breitmeyer.
Meets by special arrangement.

Valdosta (Ga.) Floral Club.
Corresponding Secretary: Mrs. A. H. Havenkotte.
Meets second Wednesday each month.

Washington (D. C.), Florists' Club of.
President: R. L. Jenkins.
Vice-president: Adolph Gude.
Secretary: Clarence L. Linz, 622 Riggs Bldg.
Treasurer: William F. Gude.
Meets first Tuesday of each month at 1214 F St., N. W.

Westchester (N. Y.) and Fairfield (Conn.) Horticultural Society.
President: Wm. Whitten.
Vice-president: John Andrews.
Secretary: John McArdle, Greenwich, Conn.
Corr. Secretary: Alex. Clarkson.
Treasurer: Robert Williamson.

Western Pennsylvania Horticultural Society.
President: David W. Fraser.
Vice-president: Wiliam Allen.
Secretary-Treasurer: Ernest R. Bolton, East Liberty, Pittsburgh, Pa.

Wholesale Cut Flower Protective Association of New York.
President: Frank H. Traendley.
Vice-president: W. S. Allen.
Secretary: Ward W. Smith, 97 Warren St., New York City.
Treasurer: E. C. Horan.
Meets first Friday of each month.

Women Florists' Club of Cleveland, (O.)
President: Mrs. Geo. Bate.
Vice-president: Mrs. Herman Knoble.
Secretary: Miss Grey.
Treasurer: Mrs. Frank A. Friedley.
Meetings held at the call of the president.

Worcester County (Mass.) Horticultural Society.
President: Arthur E. Hartshorn.
First Vice-president: Charles Greenwood.
Secretary: Herbert R. Kinney, Olean St., Worcester, Mass.
Treasurer: Burt W. Greenwood.

Garden Clubs

Albermarle Garden Club.
Secretary: Mrs. George Austen, Charlottesville, Va.

Bedford Garden Club, N. Y.
Secretary: Mrs. Benjamin W. Morris, Mt. Kisco, N. Y.

Amateur Garden Club of Baltimore, Md.
Secretary: Miss Sarah S. Manly, The Walbert.

Garden Association in Newport (R. I.)
Secretary: Mrs. Walker Smith, 73 Catherine St., Newport.

Garden Club of America.
President: Mrs. J. Willis Martin, "Edgecombe," Chestnut Hill, Philadelphia. Pa.

Garden Club of Alma, Mich.
Secretary: Mrs. E. J. Lamb, 803 State St.

Garden Club of Ann Arbor, Mich.
Secretary: Miss Annie Condon, 920 University Ave.

Garden Club of Alleghany County, Pa.
President: Mrs. Finley Hall Lloyd, Sewickley, Pa.

Garden Club of Cincinnati, O.
Secretary: Mrs. Glendinning Groesbeck, East Walnut Hills, Cincinnati, O.

Garden Club of Cleveland (O.)
Corresponding Secretary: Mrs. J. Prescott Burton, 11928 Lake Shore Boulevard, Station H, Cleveland.

Garden Club of East Hampton, L. I., N. Y.
Secretary: Mrs. F. K. Holister, East Hampton, N. Y.

Garden Club of Hartford, Conn.
Secretary: Mrs. John H. Buck, 17 Atwood St., Hartford, Conn.

Garden Club of Harford County, Md.
Secretary: Mrs. Martin E. Ridgley, Benson, P. O., Md.

Garden Club of Illinois.
Secretary: Mrs. William G. Hibbard, Jr., Winnetka, Ill.

Garden Club of Litchfield, Conn.
Secretary: Mrs. Henry S. Munroe, 501 W. 120th St., New York.

Garden Club of Lake Forest, Ill.
President: Mrs. Leverett Thompson, Lake Forest, Ill.

Garden Club of Lawrence, L. I.
Secretary: Mrs. Thomas Lawrence, Lawrence, L. I.

Garden Club of Lenox, Mass.
Secretary: Mrs. Francis C. Barlow, 47 E. 64th St., New York.

Garden Club of Michigan.
Secretary: Mrs. Frederic Towls, 183 McDougall Ave., Grosse Pointe, Mich.

Garden Club of New Canaan, Conn.
Secretary: Mrs. Francis H. Adriance, New Canaan, Conn.

Garden Club of New Rochelle, N. Y.
Secretary: Mrs. Francis M. Walker, 22 Petersville Rd., New Rochelle, N. Y.
Shows monthly May to November.

Garden Club of Norfolk, Conn.
Secretary: Philemon W. Johnson, Norfolk, Conn.

Garden Club of Orange and Dutchess County, New York.
Secretary: Mrs. Morris Rutherford, Warwick, Orange County, N. Y.

Garden Club of Philadelphia, Pa.
Secretary: Miss Ernestine A. Goodman, Chestnut Hill.

Garden Club of Princeton, N. J.
Secretary: Mrs. Junius Spencer Morgan, Constitution Hill, Princeton, N. J.

Garden Club of Ridgefield, Conn.
Secretary: Mrs. Cass Gilbert, 42 E. 64th St., New York.

Garden Club of Somerset Hills, N. J.
Secretary: Mrs. Geo. R. Mosle, Gladstone, N. J.

Garden Club of Rye, N. Y.
Secretary: Mrs. Samuel Fuller, Rye, N. Y.

Garden Club of Webster Groves, Mo.
Secretary: Mrs. John E. Stoker, 35 S. Rockhill Rd., Webster Groves.

Garden Club of Summit, N. J.
Secretary: Mrs. Henry A. Truslow, Bedford Rd., Summit, N. J.

Garden Club of Trenton, N. J.
Secretary: Miss Anne MacIlvaine, Trenton, N. J.,

Garden Club of Twenty.
Secretary: Mrs. W. Irvine Keyser, Stevenson, Baltimore, Co., Md.

Garden Club Webster Groves, Mo.
Secretary: Caroline Chamberlin, 106 Plant Ave.

Gardeners of Montana and Delaware Counties, Pa.
Secretary: Miss Elizabeth D. Williams, Haverford, Pa.

Green Spring Valley Garden Club.
Secretary: Mrs. Lawrence M. Miller, Roslyn, Md.

Greenwich (Conn.) Garden Club.
Secretary: Mrs. Frederick Gotthold.
Meets each month.

International Garden Club.
President: Mrs. Charles Frederick Hoffman. Club House, Bartow Mansion, Pelham Bay Park, New York City. (Address all communications to Mrs. F. Hammett, Ass't Sec'y., Bartow Mansion, Pelham Bay Park, N. Y.)

Larchmont (N. Y.) Garden Club.
Secretary: Mrs. William Strich.

Milbrook Garden Club, N. Y.
Secretary: Mrs. Keyes Winter, 125 E. 78th St., New York.

Newport Garden Club.
President: Mrs. Chas. F. Hoffman, 620 Fifth Ave., New York.

North Country Garden Club of Long Island.
Secretary: Mrs. Edward Townsend, Oyster Bay, L. I.

Park Garden Club, of Flushing, N. Y.
Secretary: Mrs. Arthur Woelfe, Flushing, L. I., N. Y.

Plainfield, N. J., Garden Club.
Secretary: Mrs. H. C. McMillen, Plainfield, N. J.

Ridgewood Garden Club, N. J.
Secretary: E. T. Sowter, Ridgewood, N. J.

Rumson (N. J.) Garden Club.
Corresponding Secretary: Miss Ruth Adams, 455 Madison Ave., New York City.

Shedowa Garden Club, New York.
Secretary: Miss M. F. Youngs.

Short Hills Garden Club, N. J.
Secretary: Mrs. C. H. Stout, Short Hills, N. J. Weekly at Short Hills Club House. Flower Shows April and June, and annual Dahlia Show.

Southampton Garden Club, New York.
President: Mrs. Albert Boardman, 40 W. 33rd St., New York.

Staten Island Garden Club, N. Y.
Secretary: Mrs. J. Harry Alexander, Rosebank, S. I.

The Hardy Garden Club of Ruxton, (Md.)
Corresponding Secretary: Mrs. W. George Hynson.

"The Weeders" (Pa.).
Secretary: Mrs. Curtis T. Clay, Ardmore, Pa.

Ulster Garden Club.
Secretary: Miss Mary Haldane, The Huntington, Kingston, N. Y.

Warrenton Garden Club, Virginia.
Secretary: Mrs. C. Shirley Carter, Warrenton, Va.

Important British Societies

Ancient Society of York Florists.
Secretary: Chas. W. Clark 12 New St., York.

British Gardeners' Association.
Secretary: Cyril Harding, Ulysses, Fortune Green, London, N.

British Wholesale Florists' Federation.
President: Geo. Munro, Jr.
Secretary: Charles H. Curtis, 35 Wellington St., Covent Garden, London.

Horticultural Education Ass'n.
Secretary: W. P. Wright, 5 St. Augustine Rd., Canterbury.

Horticultural Trades' Association.
Secretary: Chas. E. Pearson, Lowdham, Notts.

Jersey Growers' Association.
Secretary: P. V. Cooke, Scion House, Longueville, Jersey.

National Amateur Gardeners' Ass'n.
Secretary: F. A. Poulton, Rosemont, Park Rd., New Barnet.

National Auricula and Primula Society.
Secretary: T. E. Henwood, 16 Hamilton Rd., Reading.

National Carnation and Picotee Society.
Secretary: T. E. Henwood, 16 Hamilton Rd., Reading.

National Chrysanthemum Society.
Secretary: Chas. H. Curtis, 2 Adelaide Rd., Brentford, England.

National Dahlia Society.
Secretary: J. B. Riding, Forest Side, Chingford, Essex.

National Gladiolus Society.
Secretary: Mrs. W. Atkinson, The Flagstaff, Locksheath, Southampton.

National Rose Society.
Secretaries: Messrs. Darlington and Courtney Page, 25 Victoria St., London, S. W.

National Sweet Pea Society.
Secretary: H. D. Tigwell, Greenford, Middlesex.

National Tulip Society.
Secretary: W. Peters, Forest House, Hartington Grove, Cambridge.

National Viola and Pansy Society.
Secretary: J. Bastock, Springfield Rd., Moseley, Birmingham.

Perpetual Flowering Carnation Society.
Secretary: T. A. Weston, Floradale, Orpington.

Royal Botanic Society.
Secretary: J. Woodford, Inner Circle, Regents Park, London, W.

Royal Caledonian Horticultural Society.
Secretary: Donald MacKenzie, 23 Rutland Sq., Edinburgh.

Royal Horticultural Society.
Secretary: Rev. W. Wilks, Vincent Sq., London, S. W.

Royal Horticultural Society of Ireland.
Secretary: E. Knowldin, 5 Molesworth St., Dublin.

Scottish Horticultural Association.
Secretary: A. D. Richardson, 19 Waverley Market, Edinburgh.

Shropshire Horticultural Society.
Secretary: W. C. Brazier, The Square, Shrewsbury.

Nursery and Seed Trade Association of Gt. Britain, Ltd.
32 Gresham St., London, England.
Secretary: Charles Butcher.

Federation Nationale des Syndicats Horticoles de France.
6 Rue du Debarcadere, Paris.

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	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
	...	...	...	...	...	...	...

Decem.	S	M	T	W	T	F	S
	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31	...	...	...	...
	...	...	...	...	...	...	...

U-Bar Greenhouses
How They Differ

THEY differ mainly in being made of galvanized, aluminum finished U-Bars. These U-Bars make a complete steel frame that is as enduring as it is solid and strong.

From the outside, they have a pleasing grace and refinement.

From the inside, their sunshiny lightness gives the impression of being inside a bubble of glass.

When it comes to comparing them with other greenhouses, it is hardly fair to them. Hardly fair, because they are of necessity constructed so differently.

We say of necessity, because no other concern can use the U-Bar greenhouse frame in their construction.

All of which is stating the U-Bar differing points very briefly. Our Catalog gives an extended explanation. Send for it. Or send for us. Or both.

U-BAR GREENHOUSES

PIERSON U-BAR CO

ONE MADISON AVE. NEW YORK

A Right Now Fact Worth Considering About Greenhouse Building

THE Government has stepped in and regulated the price on all the important materials used in greenhouse construction. That means that they are now as reasonable as can be reasonably expected. It also means the cost is going to remain about where it is for some time to come.

The ending of the War will not lower them because the demand for materials from Europe will be just as great if not greater than now.

Building will start up with a jump all over the country.

Building is not going to be cheaper or easier for years to come

Now is the time to build your greenhouse.

For over half a century we have been building greenhouses. We know how they should be built. Send for Catalog. Send for us.

Lord & Burnham Co.

Builders of Greenhouses and Conservatories

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