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1916

LILLY'S
SEEDS

POULTRY
SUPPLIES
FERTILIZERS
SPRAY MATERIALS
BEE SUPPLIES

2012

2012

2012

2012

Seattle

191

Box No.

State

for \$

We exercise every precaution to grow and secure only the very best seeds, but give no warranty express or implied, as to description, productiveness or other matter of any seeds, plants or bullocks sent out and will not be in any way responsible for the crops. If the purchaser does not accept goods on these terms they are to be returned at once.

[illegible]

[illegible]

LILLY'S
COMPLETE ANNUAL
1916

SEEDS FERTILIZERS SPRAY MATERIALS
POULTRY SUPPLIES STOCK FOODS
BEE SUPPLIES

THE CHAS. H. LILLY CO.

Established 1885

Front and Taylor Sts.

PORTLAND, OREGON.

Pioneer Square, Foot of Cherry St.

SEATTLE, WASH.

Office and Warehouse

Hanford St. and West Waterway, Seattle, Wash.

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\$10.00 CASH PRIZES

For Best Exhibits of Farm and Garden Produce

GROWN FROM **LILLY'S** SEEDS

At Agricultural Fairs in Washington, Oregon and Idaho.

TO THE EXHIBITOR receiving the fair association's highest award for best exhibit of farm and garden produce at certain designated agricultural fairs in the states of Washington, Oregon and Idaho we will give an additional prize of \$10.00 provided there is conspicuously displayed with the exhibit a card, furnished by us, reading, "Grown from Lilly's Seeds."

This will apply only at fairs which we have authorized to list the offer in their premium lists, and will not apply unless it is printed in the premium list. If you wish to compete at a fair with which no arrangements have been made, have the secretary take the matter up with us, and, if consistent, we will make the necessary arrangements with him. This must be done in time to be printed in the premium list.

In all cases we must be advised by you of your intention to compete, at least one week before the opening of the fair, so that we may furnish cards to display with the exhibit. No cards other than those furnished by us will be considered.

Immediately on receipt of proper certificate signed by the secretary of the fair association we will mail our check for \$10.00 to the successful competitor. The certificate must be on a form which we will furnish to the secretary, reading as follows:

"This is to certify that Mr. _____, Address _____, has been awarded the _____ Fair Association's Highest Award for Best Exhibit of Farm and Garden Produce, and that there was conspicuously displayed with the exhibit a printed card reading "Grown from Lilly's Seeds;" also that your offer of a \$10.00 cash prize to be given in addition to such award was listed in the premium list of this Association, a copy of which has been mailed to you.

_____, Fair Association.

Per _____ Secretary."

See that your Fair Association has this offer listed in their premium list.

REGARDING ORDERS

Kindly Observe the Following Suggestions, and Assist Us in Our Endeavor to Give Prompt and Efficient Service.

ORDER EARLY. During the spring planting season, from the middle of March to the middle of May, we are crowded to full capacity, and, although our facilities and system of handling orders are highly efficient, occasional delays and errors are bound to occur; also, late in the season, we are liable to be sold out of some varieties. It is to your advantage, as well as ours, to order before the spring rush.

USE OUR ORDER BLANKS to avoid delay and chance for error.

WRITE NAME AND ADDRESS DISTINCTLY. We receive many orders which are illegible or the name or address omitted, and are unable to fill the order until we receive a complaint.

WE ACKNOWLEDGE RECEIPT of all orders amounting to twenty-five cents or more. If you do not receive an acknowledgment card promptly, it is evidence that the order has not been received by us. In case it is necessary to write to us in regard to any order for which you have received an acknowledgment card, please refer to our number, which is shown on the card. Orders are usually filled the same day that they are received by us. If, for any reason, there will be a delay of more than a few days, we will write to you explaining the delay.

PRICES of some seeds, foods and fertilizers are liable to fluctuate, and, to avoid making them high enough to cover any advance in the market, prices shown in this catalog are subject to change. Before ordering, if the price list enclosed herewith is not of recent date, write for Current Price List.

OUR PRICES are as low as is consistent with the quality of goods, and are net. We allow no discounts and give no premiums.

MARKET GARDENERS and others requiring seeds in very large quantities will please write for special quantity prices, stating varieties and quantities wanted.

REMITTANCE in full is required with all orders. To ship goods C. O. D. would cause considerable unnecessary labor, confusion and expense. We are always prompt to adjust any reasonable complaints, and any goods which are not entirely satisfactory may be returned to us, and purchase price will be refunded. Remittance should be made in the form of Post Office Money Order, Express Money Order, Bank Draft or Registered Letter. We will accept stamps in small amounts, but cannot assume responsibility for stamps or coin lost in the mails.

WE DO NOT PAY TRANSPORTATION CHARGES except when prices are quoted "postpaid." We pay transportation charges, by parcel post, express or freight, at our option, on flower seeds and vegetable seeds in lots of one pound or less, except Beans, Corn, Peas, Mushroom Spawn and Onion Sets. Except in the few cases where we specify that prices are "postpaid," if goods are to be shipped by parcel post, a sufficient amount must be remitted to pay postage; otherwise the goods will be shipped by express or freight. If goods are to be shipped by express or freight to a station at which there is no agent, a sufficient amount must be remitted to pay transportation charges.

WE MAKE NO CHARGE for sacks, or packing. Seeds, grains and feeds are sold on gross weights.

NON-WARRANTY. Most failures of seeds and plants to grow are caused by unfavorable weather, soil, or cultural conditions, which are entirely beyond our control, and it is impossible for us to guarantee success. We exercise every precaution to grow and secure only the very best seeds and plants, but give no warranty as to description, quality or productiveness of any seeds or plants, and will not be in any way responsible for the crops. Orders for goods listed in this catalog will be filled on these conditions only.

PARCEL POST RATES

On packages weighing not more than 8 ounces, the rate is 1c per ounce to all zones. More than 8 ounces takes the zone rate per pound.

Local Zone. Shipments handled by one postoffice only. 5c for first pound, and 1c for each additional two pounds.

First and Second Zones. To any postoffice within 150 miles. 5c for the first pound, 1c for each additional pound.

Third Zone. More than 150 miles, less than 300 miles. 6c for the first pound, 2c for each additional pound.

Fourth Zone. More than 300 miles, less than 600 miles. 7c for the first pound, 4c for each additional pound.

Fifth Zone. More than 600 miles, less than 1,000 miles. 8c for the first pound, 6c for each additional pound.

Sixth Zone. More than 1,000 miles, less than 1,400 miles. 9c for the first pound, 8c for each additional pound.

Seventh Zone. More than 1,400 miles, less than 1,800 miles. 11c for the first pound, 10c for each additional pound.

Eighth Zone. All over 1,800 miles, and to all points in Alaska and Canada. 12c for the first pound and 12c for each additional pound.

The limit of weight is 50 pounds to the Local, First and Second Zones; all other zones, 20 pounds. Limit of weight to Canada is 4 pounds 6 ounces.

The limit of size of a package that will be accepted by parcel post is 84 inches in length and girth combined.

Poisons cannot be shipped by parcel post.

To insure prompt and full delivery, place your order early.

VEGETABLE GARDEN ASSORTMENTS

Choice Collections at Reduced Prices

THESE ASSORTMENTS consist of our choicest varieties, the same seeds and packages as are listed among our specials in the following pages. The varieties and quantities are carefully chosen as suitable for the average home garden, and, unless one has had experience, will prove more practical than most persons would be able to select from the general list. These assortments are packed ready for shipment, and cannot be changed in any way. By packing them during the dull season, and large quantities at one time, we are enabled to offer them at greatly reduced prices.

Additional seeds may, of course, be included in the order at regular prices. Order by assortment number only.

Assortment No. 1

Regular price, 75c.

Assortment price, 50c, postpaid.

1 pkt. Crimson Globe Beet, 1 pkt. Golden Half Long Carrot, 1 pkt. Delicious Lettuce, 1 pkt. Palo Alto Parsnip, 1 pkt. Gradus Peas, 1 pkt. Crimson Giant Radish, 1 pkt. Lucullus Swiss Chard, 1 pkt. Snowball Turnip, and 1 Crop Book.

Assortment No. 2

Regular price, \$1.55.

Assortment price, \$1.00, postpaid.

1 pkt. Jones' Stringless Wax Beans, 1 pkt. Crimson Globe Beet, 1 pkt. Glory Cabbage, 1 pkt. Golden Half Long Carrot, 1 pkt. Golden Bantam Corn, 1 pkt. Pride of the Pacific Cucumber, 1 pkt. Delicious Lettuce, 1 pkt. Longkeeper Onion, 1 pkt. Palo Alto Parsnip, 1 pkt. Lincoln Peas, 1 pkt. Crimson Giant Radish, 1 pkt. Icicle Radish, 1 pkt. Delicata Squash, 1 pkt. Lucullus Swiss Chard, 1 pkt. Puget Sound Special Tomato, 1 pkt. Snowball Turnip, and 1 Crop Book.

Assortment No. 3

Regular price, \$2.25.

Assortment price, \$1.50, postpaid.

1 pkt. Golden Jersey Wax Beans, 1 pkt. Longfellow Beans, 1 pkt. Crimson Globe Beet, 1 pkt. Early Jersey Wakefield Cabbage, 1 pkt. Copenhagen Market Cabbage, 1 pkt. Golden Half Long Carrot, 1 pkt. Jack Frost Corn, 1 pkt. Pride of the Pacific Cucumber, 1 pkt. Lilly's Forcing Lettuce, 1 pkt. Wonderful Lettuce, 1 pkt. Improved Rocky Ford Muskmelon, 1 pkt. Sweet as Honey Watermelon, 1 pkt. Longkeeper Onion, 1 pkt. White Queen Onion, 1 pkt. Palo Alto Parsnip, 1 pkt. Washington Wonder Peas, 1 pkt. Thomas Laxton Peas, 1 pkt. Earliest of All Radish, 1 pkt. Icicle Radish, 1 pkt. Delicata Squash, 1 pkt. Lucullus Swiss Chard, 1 pkt. Puget Sound Special Tomato, 1 pkt. Golden West Turnip, and 1 Crop Book.

Assortment No. 4

Regular price, \$3.00.

Assortment price, \$2.00, postpaid.

1 pkt. Golden Jersey Wax Beans, 1 pkt. Jones' Stringless Wax Beans, 1/4 lb. Crimson Globe Beet, 1 pkt. Half Long Beet, 1 pkt. Early Jersey Wakefield Cabbage, 1 pkt. Glory Cabbage, 1 pkt. Golden Bantam Corn, 1 pkt. Pride of the Pacific Cucumber, 1 pkt. Batavian Broad Leaved Endive, 1 pkt. Emerald Isle Kale, 1 pkt. Delicious Lettuce, 1 pkt. Immensity Lettuce, 1 pkt. Improved Rocky Ford Muskmelon, 1 pkt. Sweet as Honey Watermelon, 1 pkt. Longkeeper Onion, 1 pkt. White Queen Onion, 1 pkt. Palo Alto Parsnip, 1 lb. Lincoln Peas, 1 lb. Gradus Peas, 1 pkt. Crimson Giant Radish, 1 pkt. Earliest of All Radish, 1 pkt. Icicle Radish, 1 pkt. Delicata Squash, 1 pkt. Hubbard Squash, 1 pkt. Lucullus Swiss Chard, 1 pkt. Mammoth Victoria Spinach, 1 pkt. Puget Sound Special Tomato, 1 pkt. Snowball Turnip, and 1 Crop Book.

Assortment No. 5

Regular price, \$3.85.

Assortment price, \$2.50, postpaid.

1 lb. Golden Jersey Wax Beans, 1 pkt. Jones' Stringless Wax Beans, 1/4 lb. Crimson Globe Beet, 1 oz. Half Long Beet, 1 pkt. Early Jersey Wakefield Cabbage, 1 pkt. Glory Cabbage, 1 pkt. Golden Half Long Carrot, 1 pkt. Early Alba Cauliflower, 1 pkt. Vilmorin's Paris Golden Yellow Celery, 1 pkt. Golden Bantam Corn, 1 pkt. Metropolitan Corn, 1 pkt. Pride of the Pacific Cucumber, 1 pkt. Batavian Broad Leaved Endive, 1 pkt. Emerald Isle Kale, 1 pkt. Delicious Lettuce, 1 pkt. Wonderful Lettuce, 1 pkt. Improved Rocky Ford Muskmelon, 1 pkt. Sweet as Honey Watermelon, 1 pkt. Longkeeper Onion, 1 pkt. White Queen Onion, 1 pkt. Palo Alto Parsnip, 1 lb. Washington Wonder Peas, 1 lb. Thomas Laxton Peas, 1 pkt. Crimson Giant Radish, 1 pkt. Earliest of All Radish, 1 pkt. Icicle Radish, 1 pkt. Delicata Squash, 1 pkt. Hubbard Squash, 1 pkt. Lucullus Swiss Chard, 1 pkt. Mammoth Victoria Spinach, 1 pkt. Puget Sound Special Tomato, 1 pkt. Snowball Turnip, 1 pkt. Golden West Turnip, and 1 Crop Book.

Order early; and, to avoid errors, use enclosed order blank.

LILLY'S VEGETABLE SEEDS

BEST FOR THE WEST

FOLLOWING ARE OUR SPECIALTIES, which have been selected as being the most desirable, and best suited to the West. If you are not familiar with the varieties, you will be safe in choosing these which experience has proven to be the best. Other good and standard varieties are listed in the Complete List of Vegetable Seeds.

Plant only the very best seed that can be procured; cheap seed is poor economy. The seed is the smallest item of expense in planting a garden, and the difference in cost between good seed and poor seed is insignificant compared with the results.

We do not claim that our seeds are cheaper than others, but they are as cheap as is consistent with the quality, and LILLY'S SEEDS are the best that are to be had at any price.

LILLY'S

Large French Green Globe Artichoke

THIS is entirely different from the Jerusalem Artichoke, of which the edible portion is the tubers, and which, in this country, is used mostly for stock food. The Green Globe Artichoke is a delicious vegetable which deserves to be more generally grown in American gardens, and is worthy of the estimation which it enjoys in other countries.

The plant resembles a giant thistle, and the edible portion is the immature flower head, which is boiled and served with a butter dressing. The young suckers are sometimes served in the same manner as asparagus.

The plants bear few, if any, heads the first year, but bear freely the second and many succeeding years.

Packet, 5c; ounce, 35c; $\frac{1}{4}$ pound, \$1.15; 1 pound, \$3.50; postpaid.

LILLY'S

Columbia Mammoth Asparagus

A SUPERIOR VARIETY, of recent introduction, surpassing all others in size, color and yield, and commanding the highest price in all markets. The delicacy of its color notably distinguishes it; the thick stalks are unusually tender, succulent, and of delicious flavor. It is the largest asparagus grown, a bunch of twelve stalks sometimes weighing two pounds.

Three years are required to grow asparagus from seed; one year may be saved by purchasing the roots. Cultural directions are given in the Crop Book, which will be furnished free with any order when requested.

Packet, 5c; ounce, 10c; $\frac{1}{4}$ pound, 25c; 1 pound, 75c; postpaid.

Asparagus Plants are listed on page 67.

Market Gardeners, and others requiring vegetable seeds in very large quantities, will please send us a list of varieties and quantities wanted, and we will quote special quantity prices.

LILLY'S SELECTED STRAIN JONES' STRINGLESS WAX BEAN

A Splendid Yellow Podded Bush Bean—
Brittle, Stringless, Delicious—
White Seeded, A Good Shell Bean

A COMPARATIVELY new variety, becoming more popular each year. Some of our customers claim that there is no other wax podded bean equal to it.

The plants are of medium size, erect, thick stemmed, without runners, early and productive.

The pods are of uniform size, long, slightly curved, round, plump, full, yellow, very brittle, entirely stringless, without fiber, and of excellent quality.

The ripe dry seeds are good for winter shelled beans; are of medium size, rather slender, roundish through cross section, truncate or rounded at ends, almost straight at eye, and solid white except a minute area of yellow around the eye.

Our strain is selected with special care, and is sold only in sealed packages.

Packet, 10c; 1 lb., 30c; 10 lbs., 25c per lb.

If to be shipped by parcel post, postage will be additional at regular parcel post rates.

Write for special prices on large quantities.

LILLY'S

CARMINE POLE BEAN

The Best Pole Bean for the
Northwest

THE BEST and most handsome all-round pole bean for snap, green shell, or dry shell beans, either for home or market.

The pods are brilliantly splashed with bright carmine on a greenish-yellow background; very long and flat, generally straight; surface smooth, very brittle, entirely stringless and without fiber; of splendid quality, and free from anthracnose.

Lilly's select stock, sold only in sealed packages.

Packet, 10c; 1 lb., 35c; 10 lbs., 30c per lb.

If to be shipped by parcel post, postage will be additional at regular parcel post rates. We do not pay postage on Beans, Corn or Peas.

Market gardeners and others requiring seeds in very large quantities, will please give us a list of seeds and quantities wanted, and we will be glad to quote lowest possible prices.

LILLY'S GOLDEN JERSEY WAX BEAN

Best Yellow Podded Bush Bean

Early

Prolific

Stringless

AN IMPROVED strain of the old standard Golden Wax, which has been so universally grown in all sections of the country for so many years. Although Golden Wax was a splendid variety, this new strain excels it.

The plants are small, hardy, very erect, vigorous, thick stemmed, without runners, early and very productive.

The pods are rich golden yellow, large and handsome; they are broad and thick, solid fleshed, of splendid quality, tender, brittle, and absolutely stringless.

The dry seeds are of medium size; white, with mottling of violet and yellow around eye and ends.

Sold only in sealed packages.

Packet, 10c; 1 lb., 30c; 10 lbs., 25c per lb.

We do not pay postage on Beans, Corn or Peas. If to be shipped by parcel post, remit a sufficient amount to pay postage.

LILLY'S

LONGFELLOW

Best Green Podded Bush Bean

Early

Long Pods

Finest Quality

FOR those who prefer a green podded bush bean, Longfellow is a superior snap variety. The plant is rather large and spreading, weighted down with heavy outstretched branches, but without runners. It is early, and very productive.

The pods are very long and straight, round, dark green, and brittle. They are rather stringy, but of good quality and fine flavor.

The dry seeds are dingy brownish-red freely splashed with pale buff; medium size; very slender and straight.

Lilly's Select Stock, sold in sealed packages only.

Packet, 10c; 1 lb., 30c; 10 lbs. 25c per lb.

If to be shipped by parcel post, postage will be additional.

Write for special prices on large quantities.

LILLY'S CROP BOOK contains cultural directions and much other useful information. It will be furnished free with any order if requested.

LILLY'S
CRIMSON
GLOBE

THE BEST

Second Early

Main Crop Beet

A **MAGNIFICENT** variety, the finest of all for the home garden; also popular with market gardeners. It is not quite so early as Crosby's Egyptian, but for second early and succession it has no equal, on account of the exquisite quality and delicious flavor.

The beet is nearly globular, slightly elongated; of medium size, about three inches in diameter; with small tops and very small tap-root.

The flesh is deep crimson, beautifully ringed or zoned, and is entirely free from stringiness or woodiness.

The extreme tenderness, sweetness, fine flavor, and attractive appearance makes this the highest type of blood turnip beet.

Our seed is especially selected from the choicest strain, and is sold in sealed packages only.

Packet, 10c; ounce, 15c; $\frac{1}{4}$ pound, 50c; 1 pound, \$1.50; postpaid.

If postage is not to be paid by us, deduct 5c per pound from postpaid prices.

LILLY'S SELECTED STRAIN
CROSBY'S EGYPTIAN BEET
 The Earliest Good Blood Turnip Beet

THIS IS AN IMPROVEMENT over the old-time favorite, Extra Early Egyptian. It is fully as early as the old variety, and excelling it in all other respects, being larger, smoother, thicker, and of much finer quality.

In color it is peerless, rich vermillion, slightly zoned; is fine grained, tender and sweet; does not become woody or hard; and the tops are not as

large as those of the old variety. It is a great favorite with market gardeners.

Lilly's select seed is sold only in sealed packages

Packet, 10c; ounce, 15c; $\frac{1}{4}$ pound, 50c; 1 pound, \$1.50; postpaid.

Market gardeners and others requiring seed in large quantities will please write for special quantity prices.

Stock Beets are splendid for cattle and poultry. See Farm Seeds Section.

CABBAGE SEED grown in the
Puget Sound country is
UNEQUALED
IN
AMERICA

**CABBAGE SEED IS
OUR SPECIALTY**

We Supply all
Sections of the
Country

LILLY'S

GLORY CABBAGE.

*The BEST
OF ALL*

LILLY'S GLORY CABBAGE is as early as Early Flat Dutch, but is also one of the very best winter cabbages, and is unexcelled in delicious flavor, crispness, solidity, and keeping qualities. No other cabbage combines so many excellent qualities in such marked degree.

The Puget Sound country is noted as being especially adapted to growing the finest cabbages. Seed grown here is acknowledged to be the best, and

Lilly's Glory is the best cabbage that is produced even in the Puget Sound country. It produces a large per cent of solid heads; large, round, thin ribbed, and very hard. A vigorous grower, good shipper, particularly attractive for market, true to type, symmetrical, uniform in size and shape, with few outside leaves, and the inside is white, crisp, tender and sweet.

Sold only in sealed packages. Pkt., 10c; oz., 20c; $\frac{1}{4}$ lb., 75c; 1b., \$2.50, postpaid.

EARLY JERSEY WAKEFIELD

**LILLY'S SPECIAL
STRAIN**

Grown on Puget Sound

EARLY JERSEY WAKEFIELD has long been the leading extra early cabbage, and is the most popular for both private and market gardeners use. It is more generally grown than all other first-early varieties, and can always be depended upon for earliness and a sure crop.

Lilly's Selected Stock is carefully grown under our personal supervision, and selected by our own expert. Users of our seed write us from all parts of the United States that Puget Sound seeds produce cabbages that head early and hard.

The heads are conical in shape; solid and heavy, with thick, heavy outer leaves.

Sold only in sealed packages. Pkt., 10c; oz., 20c; $\frac{1}{4}$ lb., 75c; 1b., \$2.50, postpaid.

COPENHAGEN MARKET CABBAGE

A
New
Early
Round
Cabbage

A
Money
Maker
For
Market
Gardeners

THIS SUPERB NEW CABBAGE originated in Denmark, where the Government is active in encouraging the production and perfection of new and superior varieties of vegetables, and has created quite a sensation during the past season. It is undoubtedly without a rival as the finest large round-headed early cabbage in cultivation.

The type is thoroughly fixed; the heads all mature at the same time; average about ten pounds each; are very solid; with small core and of fine quality.

It matures as early as Charleston Wakefield, and yields much heavier than that popular variety. The plant is short stemmed, the heads being produced almost on the ground level. The leaves are light green, rather small, saucer shaped, and always tightly folded. The plants can be set closer than is usual with varieties of similar size.

Sold in sealed packages only. Pkt., 10c; oz., 20c; $\frac{1}{4}$ lb., 75c; lb., \$2.40, postpaid.

LILLY'S
ALL SEASONS
CABBAGE

AN EXCELLENT VARIETY; a sure header and long keeper. As its name indicates, it may be planted either early or late, and although it is classed as a second early variety, it has few equals for either medium early, main crop or late use. It is of large size; heads hard and uniform; of handsome color and the finest quality. Nearly as early as Early Summer, and much larger. It comes true to type under all conditions, and has no tendency to run to seed. Very popular among market gardeners for main crop.

Our strain is specially selected, and is sold in sealed packages only.

Pkt., 10c; oz., 20c; $\frac{1}{4}$ lb., 50c; lb., \$2.00, postpaid.

DANISH BALLHEAD CABBAGE

LILLY'S

PUGET SOUND
STRAIN

OURS is an improved strain of this splendid, hard-heading, winter cabbage; grown in the Puget Sound country, and producing an unusual percentage of large, solid heads.

The heads are large, round, and very compact, weighing more than other varieties of the same size. It is unsurpassed in quality, being crisp, tender and sweet, and it is unequalled in keeping and shipping qualities. It is hardy, withstands hot weather, does not burst in wet seasons, and will stand longer in the ground than other varieties.

Sold only in sealed packages. Pkt., 10c; oz., 20c; $\frac{1}{4}$ lb., 75c; 1 lb., \$2.50. Postpaid.

DRUMHEAD SAVOY

The Best of the
Crumpled Leaved
Cabbages

THE SAVOY cabbages are noted for their fine and delicate flavor. The leaves are wrinkled in a peculiar and characteristic manner. The heads of our strain of Drumhead Savoy are large and very compact, and of a most attractive appearance. It is an excellent winter keeper. Especially recommended for home use. The finest cabbage for making sauer kraut.

Pkt., 5c; oz., 20c; $\frac{1}{4}$ lb., 60c; 1 lb., \$2.00. Postpaid.

Puget Sound Cabbage Seed

CABBAGE SEED is one of our specialties, and we produce a quality unexcelled in America. The Puget Sound country is one of the very few localities in the United States where Cabbage and Cauliflower seed of the highest quality is produced. Our Puget Sound grown seed will produce a greater percentage of large, firm heads than any other stock to be had; it has become noted all over the country, and we supply seedsmen in all parts of North America, as well as our own local trade. Our cabbage seed, being grown and acclimated in this country, is especially adapted to the Northwest.

LILLY'S GOLDEN HALF - LONG

THE BEST
MAIN-CROP CARROT

Delicious,
Sweet, Crisp,
and Tender

GOLDEN HALF-LONG is by far the best carrot for home use and for market, and by many is preferred for stock feeding, for, although it is not so large as some of the stock carrots, it equals them in yield; often twenty-five to thirty tons per acre.

It is of large size; cylindrical and smooth; the roots taper to a blunt point with very small tap-root; the color is a rich orange, and the flesh is sweet, crisp and tender.

Carrots should be more generally grown. They are a delicious vegetable, in perfect condition for eating at any time during their growth from the time they are the size of a lead-pencil until long after they are matured, and on the Pacific Coast they may be left in the ground all winter, and pulled as wanted. They are easy to grow, and our soil and climate is especially adapted to them. They are also one of the most valuable root crops for stock feeding.

Sold only in sealed packages. Pkt., 10c; oz., 15c; ¼ lb., 50c; lb., \$1.60, postpaid.

LILLY'S

CROP BOOK

The Crop Book has become so popular that we are compelled to discontinue giving it free to all who ask for it, but it will be given *with any order* if asked for.

LILLY'S EARLY FORCING CARROT

Best for Extra Early Forcing

THE EARLIEST of all carrots, and the best for forcing in hot-beds, cold-frames, or for very early out of doors. The roots are small, globular and smooth, with small tap-root. The color is orange-red; flavor excellent, and very tender.

They are recommended only for early forcing, as

Sold only in Sealed packages. Pkt., 10c; oz., 15c; ¼ lb., 50c; 1 lb., \$1.50; postpaid.

the larger varieties are better for main crop. One or two light top-dressings of nitrate of soda will do wonders in producing a quick, early crop. The quicker they can be grown, the better the quality.

Use LILLY'S COMPLETE FERTILIZER S and you will have a garden to be proud of.

LILLY'S EARLY ALBA CAULIFLOWER

EARLIEST
SOLIDEST
WHITEST

BEST EARLY
ALWAYS
GOOD

LILLY'S
BEST

EARLY ALBA CAULIFLOWER

EARLY ALBA is the best cauliflower grown, either for early or late, home use or market, for forcing or for outdoor culture. It is the largest early cauliflower, and is equally good for either extra early or for main crop. It is a sure producer of large, solid, compact, snow-white heads of unequalled quality, flavor, and beauty.

The Puget Sound country is noted as being peculiarly adapted to growing cauliflower, and there is no other place on the American continent where high-grade seed is produced. Our soil and climate, cool summers, mild winters and uniform temperature are ideal for the production of the plants and maturing the seed.

Sold only in sealed packages. Pkt., 25c; $\frac{1}{4}$ oz., 75c; $\frac{1}{2}$ oz., \$1.40; 1 oz., \$2.50, postpaid.

DANISH DRY-WEATHER CAULIFLOWER

Best for Dry Climates---Best Main Crop for Market

DANISH DRY-WEATHER Cauliflower is especially adapted for growing in dry localities where other varieties fail to make good heads, but is also an excellent variety for more favorable conditions.

It is not as early as Early Alba, and is not suitable for forcing, but the heads are large, solid, pure white, of splendid quality, and for main crop is ex-

celled by none, as it is the surest header known, and therefore the most profitable for the market gardener. It will make a good crop in dry climates where it has heretofore been considered impossible to grow good cauliflower.

Sold only in sealed packages. Pkt., 25c; $\frac{1}{4}$ oz., 75c; $\frac{1}{2}$ oz., \$1.40; 1 oz., \$2.50, postpaid.

If your garden has not been satisfactory, try **LILLY'S COMPLETE FERTILIZERS**; they will produce wonders.

LILLY'S SELECT STOCK

VILMORIN'S PARIS GOLDEN YELLOW

The Best Celery for Home or Market

THIS DELICIOUS French variety is deservedly popular, and our seed is the best that it is possible to produce, coming direct from the originators, Vilmorin, Andrieux & Co., Paris.

The plants are of medium size, with beautiful yellowish-green foliage, and as they mature the inner stalks and leaves become a beautiful golden-yellow;

as nearly self-blanching as any variety in existence.

The handsome color, crispness, tenderness, freedom from stringiness, delicious nutty flavor, sturdy growth, ease of blanching, and earliness of this variety make it unequaled for either the home garden or for market. Sold only in sealed packages.

Pkt., 10c; oz., \$1.50; 1/4 lb., \$5.00, postpaid.

LILLY'S SILVER PLUME CELERY

A Favorite for Market

A HANDSOME, early variety, popular with market gardeners on account of its very attractive appearance and requiring a very short time for blanching.

The plants are of medium size, and the foliage forms handsome silver-white plumes, so aptly suggested in the name. As the plants mature, the inner stems and leaves naturally turn white, requiring but a very short time to blanch.

The stalks are thick and heavy, with pure white hearts; brittle, crisp and tender; free from stringiness; and unexcelled in flavor.

Sold only in sealed packages.

Pkt., 10c; oz., 75c; 1/4 lb., \$1.75; lb., \$5.00, postpaid.

LILLY'S GIANT WHITE WINTER CELERY

The Best Late Variety

GIANT WHITE is unequaled as a late winter celery. Like other winter celeries, it is not self-blanching, and must be blanched by banking with earth. On the Pacific Coast it may be left in the garden until wanted for market, and will be fit for use as late as March or April.

This variety is unexcelled in keeping qualities; grows very tall but with large solid stalks; makes a splendid appearance; and when properly blanched is pure white and the flavor is delicious, the stalks being so tender and crisp that they will almost break with their own weight.

Sold only in sealed packages.

Pkt., 10c; oz., 75c; 1/4 lb., \$1.75; lb., \$5.00, postpaid.

We can furnish Celery Plants in season. See page 67.

LILLY'S GOLDEN BANTAM CORN

The Sweetest and Most Delicious Sweet Corn

GOLDEN BANTAM is the sweetest and most deliciously flavored sweet corn that has ever been grown, and has no equal for the home garden or early market. In earliness it is excelled only by Jack Frost, and in flavor it is equaled by none.

Price: Pkt., 10c; lb., 15c; 10 lbs., 12½c per lb. If shipped by parcel post, postage will be additional.

The ears are short, thick, and compactly filled with large, plump, creamy-yellow kernels, which become golden-yellow as they ripen. The stalks are of dwarf habit, sturdy and very productive. It is one of the hardiest varieties, may be planted early, and is especially adapted to the Northwest. Sold only in sealed packages.

LILLY'S

JACK FROST The Earliest Sweet Corn

THE VERY EARLIEST variety of sweet corn, and peculiarly adapted to the Pacific Coast, where it was originated by us. The ears are small, about five inches long, and are well filled with large, white kernels of delicate flavor and melting tenderness.

It remains tender and fit for use longer than other varieties. The plant is dwarf, and each stalk bears two or more ears. On account of its extreme earliness it is popular with market gardeners, as well as for home use.

Sold in sealed packages only.

Pkt., 10c; lb., 15c; 10 lbs., 12½c per lb.

LILLY'S

METROPOLITAN Early—Large—Productive

METROPOLITAN is a great favorite in the Northwest, where few of the larger varieties can be depended upon. It is as large as Stowell's Evergreen, and nearly as early as the small, extra early varieties, making it a valuable second early and main crop variety for market gardeners.

The plants are strong, rather tall, and bear two or three ears each. The ears are nine inches long, ten to twelve rowed, and filled to the tip with large, deep, white, very tender kernels of the richest flavor.

Sold in sealed packages only.

Pkt., 10c; lb., 15c; 10 lbs., 12c per lb.

We do not pay transportation charges on Corn, Beans or Peas in any quantity. If they are to be shipped by parcel post a sufficient amount must be remitted to pay postage. A 10c packet weighs about six ounces.

LILLY'S PRIDE OF THE PACIFIC CUCUMBER

The Finest for Slicing
Early, Prolific, Handsome and Uniform

P RIDE OF THE PACIFIC is a highly improved strain of the White Spine family, brought to its present state of perfection by the most careful methods of selection and cultivation. It is the best variety for green-house culture, and is unsurpassed for growing outdoors, either for market or home use.

The hardy, vigorous vines produce immense crops of smooth, rich deep green fruit, very large, symmetrical, and wonderfully uniform. It is ideal for slicing, the flesh being compact, fine-grained, sparkling white, and of a delicious flavor. Sold only in sealed packages.

Pkt., 10c; oz., 20c; $\frac{1}{4}$ lb., 60c; $\frac{1}{2}$ lb., \$1.15; lb., \$2.00, postpaid.

LILLY'S

PICKLING CUCUMBER

Unequaled

For Large or Small Pickles

L ILLY'S PICKLING CUCUMBER grows to a large size, frequently ten inches in length, is of good shape, of the finest quality and flavor, and is unequaled for pickling, either when small or large. The young cucumbers are covered with small spines, and possess the distinctly roughened surface so much desired in small pickles.

The vines are hardy, vigorous, exceedingly prolific, and continue bearing much longer than most sorts.

Sold only in sealed packages.

Pkt., 10c; oz., 20c; $\frac{1}{4}$ lb., 60c; $\frac{1}{2}$ lb., \$1.00; lb., \$1.75, postpaid.

DAVIS PERFECT CUCUMBER

Sells for Fancy Prices

A COMPARATIVELY new cucumber, growing nine to twelve inches long, and perfect in shape, color, quality, and flavor. It is very early, and when grown outdoors so closely resembles hot-house fruit that it often brings the same fancy prices.

It is uniform in shape, and handsome in appearance. The glossy, dark green color is maintained almost to maturity, and it retains its color and freshness longer than other varieties, making it splendid for market.

Lilly's Select Stock, sold only in sealed packages.

Pkt., 10c; oz., 15c; $\frac{1}{4}$ lb., 40c; $\frac{1}{2}$ lb., 70c; lb., \$1.25; postpaid.

Market Gardeners and others requiring Garden Seeds in very large quantities will please give us a list of varieties and quantities wanted, and we will quote special prices.

LILLY'S BROAD-LEAVED BATAVIAN ENDIVE (ESCAROLLE)

Hardy Winter Variety
Best for the
Pacific Coast

ENDIVE is an excellent salad vegetable, similar to lettuce, may also be cooked as greens, and by judicious planting may be had at all seasons of the year. It is extensively grown by market gardeners, especially for early spring use when lettuce is not to be had, but is not as generally grown in the home garden as it deserves to be.

Batavian Broad-Leaved Endive is especially adapted to conditions on the Pacific Coast, and is the best variety for late summer and fall planting, as it is very hardy, and west of the Cascades may be left in the garden until wanted for use

during the winter or early spring. It is equally good for early spring or summer planting in any locality, and will stand dry, hot, summer weather much better than most varieties of lettuce, and lasts longer. It may be improved somewhat by tying the leaves together to bleach it.

Sold only in sealed packages. Pkt., 10c; oz., 20c; 1/4 lb., 50c; lb., \$1.50, postpaid.

LILLY'S EMERALD ISLE KALE (BORECOLE)

Hardest
Most Compact
Densely Curled

EMERALD ISLE is a comparatively new variety of Green Curled Winter Kale, and is most desirable on account of its hardiness, excellent quality, and beautiful appearance.

It is of medium height, the leaves are so finely fringed and curled as to resemble parsley, and of a beautiful rich, emerald green color.

This variety is so hardy that it is rarely injured by freezing, is improved by frost, and may be cut at any time during the winter.

The seed is generally planted in late summer or early fall, for fall, winter, and early spring use; but it may be planted very early in spring for summer use. It supplies splendid greens at times when greens are scarce.

Sold only in sealed packages. Pkt., 10c; oz., 15c; 1/4 lb., 30c; lb., \$1.00, postpaid.

Thousand Headed Kale is the best winter green feed for stock and poultry. See Field Seeds section.

LILLY'S FORCING LETTUCE

BEST

For Green-House Forcing

or

Extra Early Outdoors

FOR FORCING in green-house or cold-frames, or for extra early culture outdoors, Lilly's Forcing Lettuce has no equal. The plant grows upright; does not form heads, but makes a quick growth of large, thin, light green leaves; finely curled, crimped and savoyed; of handsome appearance and excellent quality.

It is not liable to rot; remains in condition for cutting for a considerable time; does not wilt quickly; and stands shipping better than most varieties, making it the best variety for winter forcing in green-house.

Sold only in sealed packages.

Pkt., 10c; oz., 20c; $\frac{1}{4}$ lb., 50c; lb., \$1.25, postpaid.

NONPAREIL HANSON HEAD LETTUCE

LILLY'S

IMPROVED STRAIN

NONPAREIL HANSON is a highly improved strain of the always popular Hanson Head Lettuce, and is the finest variety of head lettuce for either market or home use for late summer.

The plant is compact, and forms large, solid, cabbage-like heads of the finest quality and flavor; remaining in good condition longer than most other sorts.

The outer leaves are bright yellowish-green; broad; somewhat crumpled and frilled at the edges; and with distinctive midrib. Inner leaves are white, very crisp, and sweet.

Sold only in sealed packages.

Pkt., 10c; oz., 20c; $\frac{1}{4}$ lb., 50c; lb., \$1.50, postpaid.

If transportation charges are to be paid by us, deduct 5c per lb. from prepaid prices.

Lettuce, to be crisp and tender, must be grown quickly. Nitrate of Soda or Nitrate of Lime will produce wonderful results. An article on this subject is contained in the Crop Book, which will be furnished free with any order if requested.

LILLY'S DELICIOUS LETTUCE

BEST

Early and Main Crop
Head Lettuce

THIS SPLENDID NEW VARIETY is very early, forming handsome, compact, firm heads of medium size and the finest quality earlier than any other head lettuce.

The color is a light yellowish-green, the outer leaves slightly tinged with reddish-brown, and the inner leaves, forming practically the entire head, blanching a rich golden-yellow, having a delicious, rich, buttery flavor peculiarly its own, and the thick leaves are tender and crisp.

Although generally used for early outdoor culture, and for succession, it is excellent for forcing, and is equally satisfactory for home use and for market, as the round, solid heads are so firmly folded that they

Sold only in sealed packages. Pkt., 10c; oz., 20c; 1/4 lb., 50c; lb., \$1.50, postpaid.

stand shipping well.

We especially recommend this variety for main crop, and if planted for succession, fine heads may be had all summer and fall.

LILLY'S

WONDERFUL

A Mammoth New Head Lettuce
Solid as a Cabbage

A POPULAR variety, thriving in all sections and during all seasons. It is a crisp, cabbage-heading lettuce, producing heads which are extremely large, sometimes measuring twelve to fifteen inches in diameter and weighing two to three pounds. On account of being slow to run to seed, it is admirably adapted for growing during the summer months, either in the North or South.

The leaves are attractively crumpled, the heart is large and blanches well, and the quality is excellent, crisp and tender. It is unexcelled as a market-gardener's lettuce, and stands shipping well.

Sold only in sealed packages.

Pkt., 10c; oz., 20c; 1/4 lb., 50c; 1/2 lb., 85c; lb., \$1.50; postpaid.

LILLY'S

IMMENSITY

A Splendid Head Lettuce For
Summer and Fall

IMMENSITY LETTUCE, although of great size, is of splendid quality, and is tender, sweet and crisp. The heads are solid, and often three feet in circumference. It has great heat resisting qualities, and is very reliable for a late crop when other varieties are unfit for use. Although of immense size, it is not coarse or bitter; even the outer leaves are tender.

Sold only in sealed packages.

Pkt., 5c; oz., 20c; 1/4 lb., 50c; 1/2 lb., 85c; lb., \$1.50; postpaid.

Market Gardeners and others requiring seeds in very large quantities will please write for special prices, giving a list of seeds and quantities wanted.

We do not pay postage, express or freight charges on any goods except when so specified in this catalog. If seeds or other goods, except vegetable seeds, flower seeds, and few other goods which we list "delivered free," are to be shipped by parcel post, or by express or freight to a station at which there is no agent, a sufficient amount must be remitted to pay transportation charges. If vegetable seeds are to be shipped by express or freight, and charges paid at destination, or if an additional amount is remitted to pay postage, 5c per pound may be deducted from "delivered" price.

PURE CULTURE MUSHROOM SPAWN

From Pedigree Stock

PURE CULTURE mushroom spawn is produced by a new system, and bears the same relation to the old English and French spawn that a grafted tree does to a wild seedling. The pure cultures are taken direct from selected speci-

mens, producing large, well-shaped mushrooms of the finest quality and of one uniform variety. We can furnish either the White, Cream-White, or Brown varieties. It is pressed in bricks weighing about 1 1/4 lbs. One brick is sufficient to spawn nine square feet of bed.

Price: 1 brick, 25c; 5 bricks, \$1.00; 10 bricks, \$1.80; 25 bricks, \$4.25; 50 bricks, \$8.00; 80 bricks, \$12.00; 100 bricks, \$15.00; 160 bricks (full case), \$22.40.

If Mushroom Spawn is to be shipped by parcel post a sufficient amount must be remitted to pay postage.

LILLY'S Seeds
Are Tested

LILLY'S IMPROVED ROCKY FORD MUSKMELON

Pollock Strain

THE ROCKY FORD is the cantaloupe that is served in all of the best hotels, brings highest prices in the markets, and is famous for its sweet, luscious, melting flesh and delicious flavor. There is no other melon to compare with it in flavor.

The melon is small, about five inches in diameter, oval in form, and the skin is rich greenish gold covered with a beautiful yellow netting, giving it a very attractive appearance.

The flesh is light green, very deep, ripening clear to the rind, very solid and with

an exceedingly small seed cavity. This seed is grown for us by one of the most reliable growers in Rocky Ford, Colorado, and is of the famous Pollock Strain. Sold only in sealed packages.

Ounce, 10c, 1/4 lb., 40c; 1/2 lb., 70c; pound, \$1.25, postpaid.

Market Gardeners will please write for special prices on large quantities.

LILLY'S KING AND QUEEN WATERMELON

Best for Market

KING AND QUEEN is the best watermelon for market and for shipping. The fruit is of uniform, medium size; round; smooth, and of fine appearance. It is very early, and yields prodigiously. The flesh is a beautiful bright red, crisp and of delicate texture, granulated, cool and sparkling. It has very few seeds, the heart is solid, and the fine quality is sustained clear to the rind.

Sold only in sealed packages.

Oz., 10c; $\frac{1}{4}$ lb., 35c; lb., \$1.25, postpaid.

If seeds are wanted in larger quantities, write for special quantity prices.

LILLY'S SWEET AS HONEY WATERMELON

Unequaled for Home Use

THE BEST and most delicious of all early watermelons for the home garden. Especially adapted to the Northwest. Medium in size, oblong in form, and the skin is a rich, dark green. The flesh is bright scarlet clear to the rind, and entirely free from stringiness. The seeds lie close to the rind, leaving a very large, solid core, lusciously sweet, crisp and melting. The rind is too thin to make it a

good long-distance shipper, but for home consumption, or for nearby markets, it is unequaled, especially for the country west of the Cascades, where only the earliest melons can be made to mature.

Sold only in sealed packages.

Pkt., 10c;
 $\frac{1}{4}$ lb., 35c; lb.,
\$1.25; post-
paid.

LILLY'S LONGKEEPER ONION

Best for Home or Market in the Northwest

LONGKEEPER as the name indicates, has marvelous keeping qualities, which in addition to its splendid appearance, fine quality and flavor, and phenomenal yield, makes it the most popular and profitable for market. It is also unequaled for home use, as the bulb forms early, and they may be used all summer. It is globular in form; of an attractive brownish-yellow color; mild and of delicious flavor. The neck is very small, and the tops die down entirely. Of medium size, uniform, very solid and heavy, and produces immense crops. Sold only in sealed packages.

Pkt., 10c;
oz., 20c; ¼ lb., 75c;
lb., \$2.50,
postpaid.

LILLY'S WESTERN WETHERSFIELD

The Best Red Onion

AN IMPROVED strain of the Wethersfield, acclimated to the Pacific Coast, and as popular in the west as the Red Wethersfield is in the east. We highly recommend it for those who wish a large red onion. In shape it is flattened like the Red Wethersfield, it is very large, and our Select

Stock seed produces large crops, free from necky or misshapen bulbs. The color is a rich dark red, the flesh is a sparkling purplish-white, and the flavor is good. Sold only in sealed packages.

Pkt., 10c; oz., 20c; ¼ lb., 75c; lb., \$2.50,
postpaid.

LILLY'S PRIZETAKER SELECT STOCK

PRIZETAKER is recognized as one of our best standard varieties, but the seed must be genuine Prizetaker. Our Select Stock seed is grown with special care, and produces bulbs enormous in size and prodigious in yield. It is the largest onion grown in this country, and almost equal to the mammoth Spanish onions. The skin is pale yellow, and the flesh clear, sparkling white.

Sold only in sealed packages.

Pkt., 10c; oz., 20c; ¼ lb., 75c; lb., \$2.50,
postpaid.

LILLY'S WHITE QUEEN For Pickles or Green Onions

THIS is the variety used by all the big pickle factories of this country. It is also a favorite for the home garden and market garden, because young onions can be produced from seed nearly as early as from onion sets. They are extra early; very small; round; not necky; handsome; and very hard and crisp. The color is a beautiful waxy white, and the flavor deliciously mild.

Sold only in sealed packages.

Pkt., 10c; oz., 20c; ¼ lb., 75c; lb., \$2.50,
postpaid.

Market Gardeners and others using very large quantities, please ask for special prices.

LILLY'S

ONION SETS

YELLOW DANVERS BOTTOM SETS

OUR ONION SETS are northern grown; hardy, handsome, small, and of uniform size. We grow only the Yellow Danvers sets, as that variety has proved to be the best for this purpose.

These sets, if planted very early, will produce the earliest green onions. On the Pacific Coast they may be planted in the fall, or any time during the winter or early spring.

They will also produce mature onions, but for that purpose seed is generally sown.

Price: 1 lb., 15c; 10 lbs., 12½c per lb.

If to be shipped by parcel post, postage will be additional.

Those requiring Onion Sets in larger quantities will please write for prices. Prices usually increase as the season advances, and we cannot make a price which will apply during the entire season.

LILLY'S

PALO ALTO PARSNIP

THE HIGHEST IMPROVED TYPE

PALO ALTO is a particularly fine and improved strain, and is a favorite with all our customers. The flesh is white and of fine texture, tender, free from core and stringiness, and of superior flavor, sweet and rich. One of the finest table vegetables for winter use. It is very hardy, and may be left in the ground all winter, or until wanted for use. Frost improves the quality and flavor.

If grown in favorable soil, the roots are smooth, well rounded and tapering. They are heavy at the shoulder, and are half-long, rendering them easy to harvest. This parsnip yields immense crops, and in addition to being the most delicious table parsnip grown, is a splendid stock food. There is no other to compare with it.

Sold only in sealed packages.

Pkt., 10c; ¼ lb., 30c; 1 lb., \$1.00; postpaid.

Those interested in poultry will be pleased with the Poultry Section of this book. We make a specialty of Poultry Foods, and our special foods for special purposes have produced splendid results. Our Poultry Department is under the management of a practical poultryman who is always glad to assist or advise you.

WORLD'S RECORD PEA

A Splendid New Variety

WORLD'S RECORD has proved to be perfectly adapted to the Northwest, and the yield and quality are wonderful for a pea so extremely early. The vines are semi-dwarf, growing only two and one-half to three feet high, and it is not absolutely necessary to furnish support for them, although it is best to do so if convenient.

The pods are large, dark green, of the Gradus type, and are filled with eight to ten large, wrinkled peas. The peas are as large, sweet, and of as fine flavor as any of the later varieties.

Packet, 10c; 1 lb., 20c; 10 lbs., \$1.75.

If to be shipped by parcel post, postage will be additional.

LILLY'S LINCOLN PEA

Dwarf—Second Early

THIS GRAND new variety originated in England, but our seed is grown and acclimated in the Northwest. The vines are dwarf, growing only about eighteen inches high, making it popular with those who dislike the labor of making a support for them.

The pods are borne in pairs, literally covering the plants, and are long, curved, deep green, and well filled with large, wrinkled peas of excellent quality.

Packet, 10c; 1 lb., 20c; 10 lbs., \$1.75.

If shipped by parcel post, postage will be additional.

WASHINGTON WONDER

An Extra Early Dwarf Pea

AN OLD FAVORITE, and a splendid extra early dwarf pea. It grows only about sixteen inches high, and requires no support if sown in double rows. It is quite prolific, and produces a good crop of well filled pods containing six to nine good sized, wrinkled peas of excellent flavor. It is sufficiently hardy to be sown in the fall on well drained soil, producing peas nearly a month earlier than spring sown seed.

Washington Wonder is as early as any of the extra early smooth varieties, and very much superior in quality and flavor. Its dwarf habit, not requiring support, makes it a favorite with many of our customers. Sold only in sealed packages.

Packet, 10c; 1 lb., 20c; 10 lbs., \$1.75.

We do not pay postage on Peas, Beans or Corn. If to be shipped by parcel post, add a sufficient amount to pay postage at parcel post rates. A 10c packet weighs about six ounces.

Market gardeners, and others requiring seeds in larger quantities than quoted in this catalog, will please send us a list of varieties and quantities wanted, and we will quote quantity prices.

LILLY'S

LILLY'S

GRADUS PEA

Extra Early

Large—Wrinkled—Sweet

THIS GRAND, extra early pea has no superiors, and few equals. It is practically as early as the little, hard, smooth, round peas generally grown for extra early, and is so much better in every other way that it is fast displacing them for first early crop. It is equal in quality to any of the late varieties, and many of our customers use it exclusively, sowing in succession for early, medium, and late.

The vine is vigorous, robust, heavy stemmed, and grows only two and one-half to three feet high. The pods are large, and are filled with six to ten large, wrinkled, marrow peas of the most delicious flavor, as large, as sweet, and as tender as the finest late pea.

Lilly's Select Stock is grown from the original strain, acclimated in the Northwest. Sold only in sealed packages.

Pkt., 10c; 1 lb., 20c; 10 lbs., \$1.75.

If to be shipped by parcel post, postage will be additional at parcel post rates.

LILLY'S CROP BOOK contains cultural directions for vegetables, flowers, and farm crops, and much other valuable information. We will furnish it free with any order, if asked for.

LILLY'S

THOMAS LAXTON PEA

As Early as the Earliest

As Good as the Latest

THOMAS LAXTON peas are very similar, to Gradus in every way except the shape of the pods, the ends of which are square, and the pods and vines are a darker green. It is nearly or quite as early as Gradus,

and the large, wrinkled, dark green peas are sweet, tender, delicious, and unexcelled in quality by any of the late varieties. The vines grow about three feet high, and produce an abundance of large pods, each containing seven or eight extra large, dark green, wrinkled peas of the most delicious flavor.

They are quite hardy, and on the Pacific Coast may be planted in the fall, producing peas much earlier than if planted in the spring. Our seed is grown in the Puget Sound country, from the original strain imported from England, is thoroughly acclimated, and by careful selection is improved in quality. Sold only in sealed packages.

Packet, 10c; 1 lb., 20c; 10 lbs., \$1.75.

If to be shipped by parcel post, postage will be additional. A 10c package weighs about six ounces.

Prices shown for Beans, Corn, Peas and Mushroom Spawn do not include postage.

Peas
Grown in
the Puget
Sound
District
are
Unexcelled

LILLY'S EARLIEST OF ALL

A DELICIOUS
BREAKFAST RADISH

A VERY SUPERIOR extra early forcing radish, equally good for early outdoor culture. It is small, very uniform, round, and the color is bright scarlet with a distinct and attractive white tip, and very small tap-root.

It is very early, and when properly grown will be ready for use in about twenty days after the seed is sown. The flesh is sparkling white, mild, crisp and tender. Sold only in sealed packages.

By mail, postpaid, ounce, 10c; $\frac{1}{4}$ lb., 30c; lb., 85c.

LILLY'S

WHITE ICICLE

The Best Long White Radish

THE FINEST early long white radish. It matures nearly as quickly as the early turnip-shaped varieties, and remains in good condition longer than any other early variety.

The tops are very small, and the roots long, slender, pure white, and very attractive. Equally desirable for home use or for market.

The flesh is not only crisp, tender, sweet and delicious when young, but remains in that condition until the roots have attained large size, requiring less frequent planting for succession.

Our seed is carefully grown and selected, and is sold only in sealed packages.

By mail, postpaid, ounce, 10c; $\frac{1}{4}$ lb., 30c; lb., 85c.

LILLY'S SEEDS ARE TESTED

We maintain a very complete Seed Testing Laboratory, where samples from various parts of each sack of each lot of seed is carefully tested for both germination and purity before being offered to our customers.

An article on the Importance of purchasing only tested seeds appears in the Crop Book. We also publish a pamphlet explaining how seeds are tested, which we will mail free on request.

Properly tested seeds can be procured from but a very few of the highest-class seedsmen.

If seeds are not to be shipped "postpaid," deduct 5c per lb. from prices shown "postpaid"

LILLY'S

CRIMSON GIANT

The King of All Early Turnip Shaped Radishes

CRIMSON GIANT is double the size of any other variety of the early turnip shaped type, often six inches or more in circumference, but notwithstanding its great size it does not become hollow or pithy; the flesh remaining sparkingly white, solid, crisp, tender and juicy, and of the mildest flavor, for a much longer period than any other. It

is equally suitable for forcing or for early planting out doors, and for succession.

The shape varies from round to oval, but the bright, deep crimson color of the skin is always the same, and the texture and flavor is unequaled.

Our seed is grown and selected with special care, and is sold only in sealed packages.

By mail, postpaid, ounce, 10c; $\frac{1}{4}$ lb., 35c; lb., \$1.00.

Radishes, to be good, must be grown quickly. This can be accomplished by the proper application of Nitrate of Soda. The Crop Book tells how to do it, and will be furnished free with any order for any of our goods, regardless of amount, if asked for with the order. It will not be furnished free except with orders, and it not for sale at any price.

LILLY'S WHITE BALL RADISH

Early—Round—White

A HANDSOME, early, turnip-shaped radish, as early as Scarlet Turnip, and equally good for forcing or outdoor culture. The skin is pure white, and the flesh is transparent white, crisp, mild, and of a pleasing flavor. It has a very small top and tap-root, remains fit for use a considerable time, and will stand more drought than most varieties.

Sold only in sealed packages.

Ounce, 10c; $\frac{1}{4}$ lb., 30c; $\frac{1}{2}$ lb., 50c; lb., 85c, postpaid.

LILLY'S SOLUBLE SULPHUR COMPOUND is the latest and best form of sulphur spray. It is fully as effectual as Lime and Sulphur Solution, is more convenient, cheaper, and you do not pay freight charges on water.

Please write

for special prices on large quantities, stating quantities wanted.

LILLY'S DELICATA SQUASH

A Delicious Squash for Both Summer and Winter

DELICATA is the earliest vine squash, maturing nearly as early as the bush varieties, which it is rapidly supplanting on account of superior quality. Being a hybrid, it varies considerably in form and color, but the quality is uniformly good. There is no other variety that can be used for so long a sea-

son. It is as dry, sweet, and deliciously flavored as the winter varieties, and, if properly stored, will keep nearly as long. The vines are very productive, and although the fruits are not large, they are very solid and heavy. The flesh is thick, of fine texture, pale yellow in color, and is dry and mealy, either baked or boiled. There is none better for pies.

Ounce, 10c; $\frac{1}{4}$ lb., 30c; $\frac{1}{2}$ lb., 55c; lb., \$1.00; postpaid.

LILLY'S HUBBARD SQUASH

An Old Favorite

**The Best
Winter Squash**

AN IMPROVED strain of the true Hubbard, which has long been the most popular winter squash, and is still one of the very best. The vines are strong, vigorous and prolific. The squashes are large, sometimes weighing as much as twenty-five pounds. The shell is dark green, extremely hard, tough, and densely warted. The flesh is golden yellow, thick, fine grained, richly flavored, sweet and dry; equally delicious when boiled, steamed or baked. No other squash can be compared with it in flavor. It is unequalled as a winter keeper and shipper.

Ounce, 10c; $\frac{1}{4}$ lb., 30c; $\frac{1}{2}$ lb., 55c; lb., \$1.00; postpaid.

**LILLY'S
SEEDS
ARE
TESTED
AND
WILL
GROW**

CROP BOOK will be furnished free with any order if requested.

LILLY'S MAMMOTH VICTORIA SPINACH

Long-Standing
Tender
Delicious

SPINACH is one of the best of the vegetables grown for greens, and Mammoth Victoria is a very superior variety. It is especially good for early spring and successive plantings for summer use, but is also an excellent variety for fall planting for winter and early spring use.

Mammoth Victoria is a long-standing variety, very slow in going to seed, and remains in an edible condition much longer than others.

The long, pointed leaves have very small midribs, are of a deep green color, thick, fleshy, heavily crimped, tender, delicately flavored, and delicious. Our seed is carefully grown and selected, and is sold only in sealed packages.

By mail, postpaid, pkt., 10c; oz., 15c; ¼lb., 25c; lb., 60.

LILLY'S LUCULLUS SWISS CHARD SPINACH BEET

LUCULLUS is the newest, largest, and best variety of Swiss Chard or Spinach Beet; with large yellow leaves finely crinkled, and with broad, white, tender midribs.

Swiss Chard is a type of beet grown for its large, tender, succulent leaves and stems. The thick, fleshy leaf-stalks are cooked and served like asparagus, and are most delicious. The leaves are boiled like spinach, making excellent greens.

The seed is planted early in spring, like beets, and the tops are cut off as wanted during the summer. New, tender shoots spring up quickly after the tops have been cut off, so that it is not necessary to make successive plantings, and a few short rows in the garden will supply all that a family can use.

It is ready for use early in summer, continues until killed by freezing weather, and comes up again very early the next spring. A new crop should be planted each spring, for that planted the previous year is liable to go to seed during the summer.

Our seed is specially grown for us, carefully selected, and is sold in sealed packages only.

Pkt., 5c; oz., 10c; ¼ lb., 30c; lb., 85c, postpaid.

Any varieties listed among our Specials may be depended upon as being best for the Northwest

LILLY'S PUGET SOUND SPECIAL

BEST
EXTRA
EARLY
TOMATO

A TOMATO THAT
WILL MATURE
ON THE
PACIFIC COAST

GOOD
ANYWHERE

BEST
WEST OF
THE CASCADES
FOR EITHER
EARLY
OR
MAIN CROP

PUGET SOUND SPECIAL in addition to being one of the very earliest tomatoes, is one of the best, and is decidedly the best tomato that may be depended upon to mature in the country west of the Cascade Mountains.

It is equaled in earliness only by the Earliana, sometimes producing ripe fruit, when grown outdoors, as early as July 4th, and, although an early tomato is seldom equal to the later varieties in quality, Puget Sound Special is of particularly fine quality.

Pkt., 10c; oz., 40c; $\frac{1}{4}$ lb., \$1.25; $\frac{1}{2}$ lb., \$2.25; lb., \$4.00, postpaid.

The flesh is solid, meaty, and of delicious flavor, with few seeds and no hard core or pulpy cavities. It is a heavy yielder of splendid firm fruits, which, although not perfectly round, are of good shape and rich red color.

It is the best early tomato for any locality, and for the Pacific Coast it is the best for either early, late, or hot-house culture.

Sold only in sealed packages.

The Crop Book contains some good articles on Tomato Culture. It will be furnished free with any order, regardless of amount, if asked for. If requested, we will furnish Littooy's "Early Tomato Culture" free with an order for one-half pound or more of tomato seed. Price is 25c.

LILLY'S IMPROVED STRAIN EARLIANA TOMATO The Earliest Variety

ALTHOUGH this is an extremely early variety, the earliest good variety grown, the quality is excellent. It produces large clusters of medium size, deep red fruit, uniform in size and of good shape; very solid and of fine flavor. It is a popular variety for greenhouse forcing, and is excelled only by Puget Sound Special for outdoor culture on the Pacific Coast. Lilly's improved strain is sold only in sealed packages.

Packet, 10c; oz., 35c; $\frac{1}{4}$ lb., \$1.00; $\frac{1}{2}$ lb., \$1.75; lb., \$3.00, postpaid.

LILLY'S

PUGET SOUND FORCING TOMATO Best for Greenhouse Culture

THIS SPLENDID extra early strain is especially valuable for greenhouse culture. It is a prolific bearer, and most of the fruit is borne close to the main stalk, allowing close pruning. The fruit is of

medium size, excellent shape for an early tomato, and of splendid quality. The flesh is firm and meaty, deep red, and fine flavor. Sold only in sealed packages.

Packet, 10c; oz., 40c; $\frac{1}{4}$ lb., \$1.25; $\frac{1}{2}$ lb., \$2.25; lb., \$4.00, postpaid.

LILLY'S SELECT STOCK PONDEROSA

Immense Size—Finest Quality

PONDEROSA is massive in size, often attaining a circumference of eighteen inches and weighing two to four pounds, of good form, smooth, free from wrinkles, and does not crack. The flesh is solid and meaty, free from cavities, almost seedless, and of the most delicious flavor.

The plant is luxuriant, healthy, independent of drought, free from blight, and a continuous and prolific bearer. It is medium late, and cannot be depended upon to mature west of the Cascade Mountains, but it is a splendid variety for the country east of the mountains. Sold only in sealed packages.

Packet, 10c; oz., 35c; $\frac{1}{4}$ lb., \$1.15; $\frac{1}{2}$ lb., \$2.00; lb., \$3.50, postpaid.

LIVINGSTON'S CORELESS A Splendid New Variety Large—Late Best for Canning

CORELESS is a medium large, late tomato of recent introduction, is a good variety for slicing, and is especially desirable for canning. In shape it is almost perfectly globular, with little or no depression at the stem-end. There is no hard core, and the seed cells are surrounded by bright red, heavy, meaty, and delicious flesh. It is very productive, the fruit being produced in large clusters at close intervals along the stem, and, on account of its superior solidity, it is a good long distance shipper. Sold only in sealed packages.

Packet, 10c; oz., 35c; $\frac{1}{4}$ lb., \$1.15; $\frac{1}{2}$ lb., \$2.00; lb., \$3.50, postpaid.

LILLY'S

SNOWBALL

The Finest Early White Turnip

THIS DELICIOUS TURNIP is the best early white variety grown. It is equaled in earliness only by Extra Early White Milan, to which it is in every other way superior. Under favorable conditions it will be ready for use six weeks after the seed is sown. It is small, and uniform in size and shape, which is almost perfectly globular. The skin is smooth, white, and thin; and the flesh is pure sparkling white, sweet, tender, crisp, and delicious. Sold only in sealed packages.

Ounce, 10c; $\frac{1}{4}$ lb., 25c; $\frac{1}{2}$ lb., 40c; lb., 75c, postpaid.

LILLY'S

GOLDEN WEST

The Best Early Yellow Turnip

THE FINEST yellow fleshed early table turnip in cultivation. The bulb is small, round, smooth, and handsome, with yellow skin and small tap-root. The flesh is deep yellow, fine grained, tender, sweet and rich; and the flavor is unequaled. It is of quick growth, and is adapted for either spring, summer, or early fall planting. Sold only in sealed packages.

Ounce, 10c; $\frac{1}{4}$ lb., 25c; $\frac{1}{2}$ lb., 40c; lb., 70c, postpaid.

LILLY'S

EXTRA EARLY WHITE MILAN TURNIP

The Very Earliest

AN EXCELLENT table turnip, and the earliest of all varieties; adapted for very early spring planting. The tops are small; the bulbs of medium size, flattened, and ivory-white in color. The flesh is fine grained, tender, and of a mild, sweet flavor. It remains in good condition for a long period of time, and does not become pithy or stringy. Lilly's Special Strain is sold only in sealed packages.

Ounce, 10c; $\frac{1}{4}$ lb., 25c; $\frac{1}{2}$ lb., 40c; lb., 75c, postpaid.

If seeds are to be sent by express or freight, not prepaid, deduct 5 cents per lb. from prepaid prices.

Market Gardeners and others requiring garden seeds in very large quantities, will please give us a list of seeds and quantities wanted, and we will quote lowest possible quantity prices.

LILLY'S

PETROWSKI TURNIP

A New Yellow Variety

THIS NEW early yellow turnip was imported from Finland, and promises to become very popular in this country. The United States Department of Agriculture has experimented with it in Alaska, and following is description furnished by Prof. C. C. Georgeson, Special Agent in Charge of Alaska Investigations: "Turnip of medium size; top short, spreading, so that the lower leaves generally lie on the ground. Flesh yellow, tender, very pleasant. Shape, rounded, almost spherical; quite uniform in size and shape. Medium early. An excellent keeper, and altogether the best turnip we have ever tried in Alaska." Sold only in sealed packages.

Ounce, 10c; $\frac{1}{4}$ lb., 30c; $\frac{1}{2}$ lb., 55c; lb., \$1.00, postpaid.

LILLY'S

COMPLETE LIST STANDARD AND SPECIAL VARIETIES VEGETABLE SEEDS BEST FOR THE WEST

Artichoke

One ounce will produce 500 plants.

DELIVERED FREE			
Pkt.	Oz.	$\frac{1}{4}$ lb.	1 lb.

LARGE FRENCH GREEN GLOBE. See Specialties	\$0.05	\$0.35	\$1.15	\$3.50
Jerusalem, Tubers. See page 71				

Asparagus

One ounce for 500 plants. 1 lb. per acre.

COLUMBIA MAMMOTH. See Specialties	.05	.10	.25	.75
Colossal. A splendid variety; productive and of fine quality	.05	.10	.20	.60
Palmetto. Early, prolific and of large size	.05	.10	.20	.60
Asparagus Roots. See page 72				

BEET

One ounce to 50 feet of drill. 5 lbs. per acre.

CRIMSON GLOBE. See Specialties	.10	.15	.50	1.50
CROSBY'S EGYPTIAN. See Specialties	.10	.15	.50	1.50
Early Egyptian. The old standard extra early blood turnip beet. The roots are flattened, of medium size, and the tops small	.05	.10	.35	1.00
Early Blood Turnip Beet. A standard medium early variety of excellent quality. Color deep blood-red	.05	.10	.35	1.00
Eclipse Blood Turnip Beet. Extremely early; of uniform globular form; deep red color; fine grained, tender and sweet	.05	.10	.35	1.00
Detroit Blood Turnip Beet. An improved strain of the Early Blood Turnip Beet. Remarkably uniform and smooth; medium size; flesh fine grained and tender. Excellent for either early or late use	.05	.10	.35	1.00
Half Long. A half-long blood beet of superior quality; tender, sweet and free from woody fiber. Unequaled for winter use	.05	.10	.35	1.00
Long Smooth Blood-Red. An excellent late variety, and a great improvement over the common Long Blood Beet	.05	.10	.35	1.00
SPINACH BEET, or SWISS CHARD. See Specialties	.05	.10	.30	.85

Beet, Sugar

One ounce to 50 feet of drill. 5 lbs. per acre.

DELIVERED FREE		
Pkt.	$\frac{1}{2}$ lb.	1 lb.

Klein Wanzleben Sugar Beet. See Farm Seeds Section	\$0.10	\$0.30	\$0.50
French White Sugar Beet.	.10	.30	.50

Beet, Stock, or Mangel Wurzel

One ounce to 50 feet of drill. 5 lbs. per acre.

DANISH SLUDSTRUP MANGEL. See Farm Seeds Section	.10	.30	.50
Golden Giant Mangel	.10	.30	.50
Half Sugar Mangel	.10	.30	.50
Royal Red Mangel	.10	.30	.50
Long Red Mangel	.10	.30	.50
Yellow Globe Mangel	.10	.30	.50
Golden Tankard Mangel	.10	.30	.50
Giant Intermediate, or Gate Post Mangel	.10	.30	.50

If seeds are to be shipped F. O. B. Seattle or Portland deduct 5c per pound from these prices.

Prices shown for Beans do not include transportation charges. If Beans are to be shipped by parcel post, an additional amount must be remitted sufficient to pay postage at parcel post rates as shown on page 5.

BEANS

DWARF, WAX OR YELLOW-PODDED VARIETIES. F. O. B. Seattle or Portland

One pound to 100 feet of drill. 50 lbs. per acre.	Pkt.	1 lb.	10 lbs.
GOLDEN JERSEY WAX. See Specialties.....	\$0.10	\$0.30	\$2.50
JONES' STRINGLESS WAX. See Specialties.....	.10	.30	2.50
Prolific Black German Wax. The earliest of the wax beans. Pods of medium length, generally curved. Fine quality, stringless and tender.....	.10	.25	2.00
Davis White Kidney Wax. Immensely productive. Good either green or as a dry bean.....	.10	.30	2.50
Golden Wax. A standard variety; medium early. The pods are stringless, very tender, and of excellent quality.....	.10	.25	2.25
Wardwell's Kidney Wax. A splendid wax bean. The pods are long, flat, delicate waxy-yellow, stringless and brittle.....	.10	.30	2.50
Flageolet Wax. Excellent for either home use or market; very early and unusually free from rust. The pods are flat, often twelve inches long.....	.10	.30	2.50

DWARF, OR BUSH, GREEN-PODDED VARIETIES

One pound to 100 feet of drill. 50 lbs. per acre.	Pkt.	1 lb.	10 lbs.
LONGFELLOW. See Specialties.....	.10	.30	2.50
Refugee, or 1,000 to 1. A popular medium to late variety; very productive, and the pods are handsome and tender. Extensively grown for pickling.....	.10	.35	3.00
Burpee's Stringless Green Pod. A very early and hardy stringless green-podded bean. The pods are round, straight, and about five inches long.....	.10	.30	2.50
Horticultural Dwarf. A bush variety of the popular Tall Horticultural. A good shell bean.....	.10	.30	2.50
Improved Red Valentine. Very early; particularly stringless; full, round, meaty pods.....	.10	.25	2.25
Long Yellow Six Weeks. Early, productive, and of excellent quality; pods often eight inches long.....	.10	.30	2.50

POLE, OR CLIMBING VARIETIES

One pound for 150 hills. 15 lbs. per acre.	Pkt.	1 lb.	10 lbs.
CARMINE POLE BEAN. See Specialties.....	.10	.35	3.00
Indian Chief, or Tall Black Wax. An old favorite, producing tender, succulent pods in great abundance. Black-seeded, with thick golden-yellow pods.....	.10	.30	2.50
White Creaseback. An excellent early pole bean; productive, stringless, tender, and of superior quality. The mature beans are white, and are good shelled.....	.10	.30	2.50
Kentucky Wonder, or Old Homestead. One of the best pole beans, excelled only by Lazy Wife for the home garden.....	.10	.25	2.00
White Dutch Case-Knife. A good pole bean, but not a very vigorous grower.....	.10	.25	2.00
Tall Horticultural, or Speckled Cranberry. An old and popular variety; useful either as a snap bean or as a dry shelled bean.....	.10	.20	1.50
Lazy Wife. The most popular pole bean for the home garden. The pods are broad, thick and stringless.....	.10	.30	2.50
Scarlet Runner. Popular for both ornamental and culinary purposes. Grows about ten feet high, bearing large scarlet flowers followed by large green-podded beans; excellent either as snap or shelled beans.....	.10	.30	2.50

Beans, Lima

One pound for 100 hills.

One pound for 100 hills.	Pkt.	1 lb.	10 lbs.
King of the Garden, or Large White Lima. The standard pole lima bean, but not so well adapted to the Northwest as the bush varieties.....	.10	.25	1.60
Burpee's Bush Lima. A medium early bush lima bean, growing about twenty inches high, and bearing exceptionally large pods and beans of fine quality.....	.10	.25	1.75
Dreer's Bush Lima. A splendid bush variety; vigorous, and bearing liberally, large, thick, sweet, succulent beans.....	.10	.25	1.60
Henderson's Bush Lima. The earliest of all bush lima beans, and two weeks earlier than the pole varieties. The beans are small, but of delicious flavor.....	.10	.25	1.60

Broccoli

DELIVERED FREE

One ounce to 2,000 plants.	Pkt.	Oz.	1/4 lb.	1 lb.
Large White French. A winter substitute for cauliflower, to which it is similar but inferior.....	\$0.05	\$0.40	\$1.25	...

Brussels Sprouts

One ounce to 2,000 plants.

One ounce to 2,000 plants.	Pkt.	Oz.	1/4 lb.	1 lb.
Dwarf Improved. A dwarf, compact growing sort, producing sprouts of fine quality. Sow in June for fall crop.....	.05	.15	.45	1.50

Order early to insure full and prompt delivery. Use our order blanks to avoid errors.

CABBAGE

One ounce for 1,500 plants. $\frac{1}{4}$ lb. per acre.

	DELIVERED FREE			
	Pkt.	Oz.	$\frac{1}{4}$ lb.	1 lb.
EXTRA EARLY VARIETIES				
COPENHAGEN MARKET. See Specialties.....	.10	.20	.75	2.40
EARLY JERSEY WAKEFIELD, SELECT. See Specialties.....	.10	.20	.75	2.50
Early Jersey Wakefield. The old standard extra early cabbage. Pointed heads; splendid flavor.....	.05	.20	.60	1.75
Early Winningsstadt. A good early cabbage, not so early as the Wakefield. Pyramidal shaped heads.....	.05	.20	.60	1.75
Charleston Wakefield. Large, solid heads of excellent quality. Same shape as Early Jersey Wakefield, but a little later.....	.05	.20	.65	2.00
SECOND EARLY VARIETIES				
GLODY. See Specialties.....	.10	.20	.75	2.50
ALL SEASONS. See Specialties.....	.10	.20	.60	2.00
Early Spring. A good early flat-headed variety, only one week later than the extra early varieties.....	.05	.20	.65	2.00
Early All Head. A very early flat-headed cabbage of good quality, size, and uniform shape.....	.05	.20	.65	2.00
Kenderson's Early Summer. A very popular flat-headed mid-season's cabbage, ten days later than Wakefield.....	.05	.20	.60	1.75
Early Flat Dutch. A very popular second early flat-headed cabbage of excellent quality.....	.05	.20	.65	2.00
WINTER VARIETIES				
DANISH BALLHEAD. See Specialties.....	.10	.20	.75	2.50
DRUMHEAD SAVOY. See Specialties.....	.10	.20	.60	2.00
Surehead. A good strain of Late Flat Dutch. A reliable header and good keeper.....	.05	.20	.60	1.75
Premium Late Flat Dutch. An excellent standard late cabbage for fall use; tender and of superior flavor.....	.05	.20	.60	1.75
Large Late Drumhead. A splendid shipper. Heads large, heavy and solid.....	.05	.20	.60	1.75
Autumn King. A fine winter variety of vigorous growth, large, well formed, globular heads of bluish green color.....	.05	.20	.65	2.00
Fettler's Brunswick. Heads large, flat and solid. A sure header. Short stemmed.....	.05	.20	.60	1.75
Red Dutch. A popular hard headed sort for pickling. Rather small but of excellent quality.....	.05	.20	.65	2.00

Cabbage Plants. See page 73.

Cauliflower

One ounce for 2,000 plants.

	DELIVERED FREE			
	Pkt.	$\frac{1}{4}$ Oz.	$\frac{1}{2}$ oz.	1 oz.
EARLY ALBA. See Specialties.....	\$0.25	\$0.75	\$1.40	\$2.50
DANISH DRY WEATHER. See Specialties.....	.25	.75	1.40	2.50
Snowball. A splendid early variety, and a sure header.....	.05	.60	1.10	2.00
Early Dwarf Erfurt. Good sized heads of excellent quality. Plants dwarf and compact.....	.05	.75	1.40	2.50
Large Late Algiers. A good late variety for fall use, producing fine large heads.....	.05	.25	.40	.75

Cauliflower Plants. See page 72.

Carrot

One ounce for 125 feet of drill. 4 lbs. per acre.

	DELIVERED FREE			
	Pkt.	Oz.	$\frac{1}{4}$ lb.	1 lb.
GOLDEN HALF-LONG. See Specialties.....	\$0.10	\$0.15	\$0.50	\$1.60
LILLY'S EARLY FORCING CARROT. See Specialties.....	.10	.15	.50	1.50
Early French Forcing. Extra early and a popular variety for forcing. Roots small and globular; color orange-red.....	.05	.15	.50	1.50
Short Horn, or Early Scarlet Horn. An excellent variety for early planting outdoors. Roots about three inches long; reddish-orange; good flavor.....	.05	.15	.40	1.25
Chantenay, or Model. An excellent stump-rooted variety, about six inches long and very broad at the shoulder; free from core, fine grained and tender; orange-red.....	.05	.15	.40	1.25
Oxheart, or Guerranda. About six inches long, thick and blunt rooted; orange-red. Desirable in soils too stiff and hard for longer sorts.....	.05	.10	.35	1.00
Danvers' Half-Long. A favorite standard variety of splendid quality; equally desirable for table or stock.....	.05	.10	.35	1.00
Improved Long Orange. A splendid variety for either table or stock; grows about twelve inches long and three inches in diameter.....	.05	.10	.35	1.00
Improved Short White. The most productive white variety. Popular for stock feeding.....	.05	.10	.30	.85
White Belgian. A large and very productive stock carrot.....	.05	.10	.30	.85
MASTODON. See Farm Seeds Section.....	.10	.10	.30	.85

Lilly's seeds are tested for Purity and Germination. If the package is branded "Lilly's," they are good.

Celery

One ounce for 3,000 plants.

	DELIVERED FREE			
	Pkt.	Oz.	¼ lb.	1 lb.
VILMORIN'S PARIS GOLDEN YELLOW. See Specialties.....	.10	1.50	5.00	...
SILVER PLUME. See Specialties.....	.10	.75	1.75	5.00
GIANT WHITE WINTER. See Specialties.....	.10	.75	1.75	5.00
Golden Self Blanching. A good standard early variety; blanching easily. The heart is rich golden-yellow, the outer leaves yellowish green.....	.05	.60	1.75	6.00
Giant Pascal. A popular variety for winter use. It blanches easily, and is one of the best keepers.....	.05	.25	.75	2.50
Giant White Solid. A good late variety of immense size.....	.05	.20	.60	2.00
Boston Market. A late variety with solid, half-round, green stalks, blanching white and crisp; dwarf and robust.....	.05	.20	.60	2.00

Celeriac, or Turnip-Rooted Celery

Large Prague. Large, round, smooth, turnip-like roots; used for flavoring soups or as a salad.....	.05	.20	.60	1.75
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Chervil

Curled. Very finely curled, resembling parsley; used in soups and salads.....	.05	.10	.30	1.00
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Chicory

Large Rooted. Used as a substitute for coffee; and the young blanched shoots are used for salad.....	.05	.15	.40	1.25
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Chives, or Schnittlauch

Chives. Has a mild flavor of young onions, and is used in soups and salads.....	.10	.50	...	...
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Collards

Georgia. A loose form of cabbage grown in the South for greens. Not adapted to the Northwest.....	.05	.15	.30	1.00
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Prices shown for Corn do not include transportation charges. If Corn is to be shipped by parcel post, an additional amount must be remitted sufficient to pay postage at parcel post rates as shown on page 5.

CORN, SWEET

One pound for 200 hills 15 lbs. per acre.

EARLY VARIETIES.

	F. O. B. Seattle or Portland		
	Pkt.	1 lb.	10 lbs.
JACK FROST. See Specialties.....	.10	.15	1.25
GOLDEN BANTAM. See Specialties.....	.10	.15	1.25
METROPOLITAN. See Specialties.....	.10	.15	1.00
Peep O'Day. Extra early and very prolific. Popular with market gardeners.....	.10	.15	1.25
Early Cory, Red Cob. One of the best extra early varieties; sweet and tender; plants stocky.....	.10	.15	1.00
Early White Cob Cory. Very early; ears six to seven inches long; kernels milky-white, sweet and tender.....	.10	.15	1.00
Early Minnesota. A standard variety of dwarf growth; a little later than Cory; ears of fair size and good quality.....	.10	.15	1.00

MEDIUM EARLY VARIETIES.

Crosby's Early. A popular second early variety; ears about seven inches long, and of fine quality.....	.10	.15	1.00
Mammoth White Cory. Similar to Early White Cob Cory, and nearly as early; kernels are broader and ears are longer.....	.10	.15	1.00
Perry's Hybrid. A popular second early of stocky growth, with usually two ears of good size set low on the stalk; ears well filled with large, sweet, tender kernels.....	.10	.15	1.00
Early Mammoth. A good second early variety. The ears are very large, and the kernels are large and sweet.....	.10	.15	1.00
Early Evergreen. Resembles Stowell's Evergreen, but is earlier...	.10	.15	1.00

LATE VARIETIES.

Country Gentleman. The finest of all late varieties for home use. Ears eight to nine inches long; cob small and irregularly crowded from end to end with long white kernels; sweet, tender and delicious.....	.10	.15	1.25
Stowell's Evergreen. The standard late variety for home, market, and canning. The kernels are long, exceptionally tender and sugary, and remain long in the "milk".....	.10	.15	1.00
Black Mexican. A splendid late variety, with ears about eight inches long, filled with large kernels which are white until ripe, when they become black.....	.10	.15	1.00

Corn, Pop

Ten pounds per acre.

White Rice Pop Corn. The best corn for popping and for the market; early; small, white, pointed kernels.....	.10	.10	.80
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Market Gardeners and others requiring seeds in very large quantities will please give us a list of varieties and quantities wanted and we will be glad to quote special quantity prices.

Prices shown for Corn do not include transportation charges. If Corn is to be shipped by parcel post, a sufficient amount must be remitted to pay postage at parcel post rates as shown on page 5.

Corn, Field

F. O. B. Seattle or Portland
1 lb. 10 lbs. 50 lbs. 100 lbs.

GOLDEN NUGGET—1 ear, 15c; 2 ears, 25c; 12 ears, \$1; 100 ears, \$8.				
GOLDEN NUGGET, Shelled. See Field Seeds Section..... per lb.	\$0.10	\$0.06	\$0.05½	\$0.05
SILVER KING—1 ear, 15c; 2 ears, 25c; 12 ears, \$1.00; 100 ears, \$8.00.				
SILVER KING, Shelled. See Field Seeds Section..... per lb.	.10	.06	.05½	.05
Leaming Improved. Early yellow dent corn; long, narrow kernels.	.10	.05	.04½	.04
Iowa Gold Mine. A medium early golden-yellow dent corn.....	.10	.05½	.04	.04½
Pride of the North. A splendid quick-growing yellow dent corn.....	.10	.05	.04½	.04
Champion White Pearl. A large, late, white dent corn.....	.10	.05½	.05	.04½
Early Canada. An early yellow flint variety.....	.10	.05	.04½	.04
King Philip. An early red flint corn, adapted to the Northwest.....	.10	.05½	.05	.04½
Sanford White Flirt. A reliable, early, large, white flint corn.....	.10	.05½	.05	.04½
Minnesota King. Yellow dent; recommended for the Northwest.....	.10	.05½	.05	.04½
Sweet Fodder Corn. A sweet corn, producing an abundance of leaves.	.10	.05½	.05	.04½
Red Cob Ensilage Corn. A field corn for fodder and ensilage.....	.10	.05½	.05	.04½

Corn Salad

DELIVERED FREE

Large Headed Petticus, or Lamb's Lettuce. Hardy little plants grown for a late fall, winter and spring substitute for lettuce...	Pkt.	Oz.	¼ lb.	1 lb.
	.05	.10	.25	.75

Cress

Water Cress. Used as a salad and garnish for meats. Must be grown in shallow water.....	.05	.35	1.00	...
Curled Cress, or Pepper Grass. Crisp, pungent leaves; used as a condiment and for garnishing.....	.05	.10	.20	.50

Cucumber

One ounce for 60 hills. 2 to 3 pounds per acre.

PRIDE OF THE PACIFIC. See Specialties.....	\$0.10	\$0.20	\$0.60	\$2.00
LILLY'S PICKLING. See Specialties.....	.10	.20	.60	1.75
DAVIS PERFECT. See Specialties.....	.10	.15	.40	1.25
Cool and Crisp. An excellent strain of White Spine; early, prolific, and bears the whole season; long, straight, and tapering at both ends; color, dark green.....	.05	.15	.35	1.00
White Spine, Improved. A popular standard variety for both home use and market. It is early, and produces an abundant crop of long straight, light-green fruit of splendid quality.....	.05	.15	.40	1.25
Early Cluster. An early, prolific, prickly, short green variety, adapted either for forcing or outdoor culture.....	.05	.10	.35	1.00
Green Prolific. A short, green, productive variety for pickling.....	.05	.10	.35	1.00
Long Green. Dark green fruits twelve to fourteen inches long; firm, crisp, and excellent for either slicing or pickling.....	.05	.15	.40	1.25
Early Frame, or Short Green. Very productive; fruits straight, but small at ends; bright green.....	.05	.10	.35	1.00
West India Gherkin. A small prickly variety, used for pickles only..	.05	.20	.65	2.00
Boston Pickling. A popular variety for pickling.....	.05	.10	.35	1.00
Chicago Pickling. A prolific, deep green pickling cucumber; medium size and pointed at both ends.....	.05	.10	.35	1.00

Egg Plant

New York Improved. The standard market variety. Fruits large, nearly round, dark purple.....	.95	.30	1.00	3.50
Black Pekin. Early and prolific; fruit large, round, solid, purplish- black.....	.05	.30	.90	3.00

Endive

BROAD-LEAVED BATAVIAN. See Specialties.....	.10	.20	.50	1.50
Green Curled. A standard green variety for fall and winter use.....	.05	.15	.40	1.25
White Curled. Leaves pale green; grows to a large size; always crisp and tender.....	.05	.15	.40	1.25

Herb Seeds

Anise.....	.05	.10	.25	...
Basil, Sweet.....	.05	.15	.45	...
Caraway.....	.05	.10	.25	...
Catnip.....	.05	.40	1.00	...
Dill.....	.05	.10	.25	...
Fennel, Sweet.....	.05	.10	.25	...
Lavender.....	.05	.15	.50	...
Sweet Marjoram.....	.05	.15	.50	...
Rosemary.....	.05	.35	...	...
Sage.....	.05	.15	.45	...
Summer Savory.....	.05	.10	.35	...
Thyme.....	.05	.25	...	...

For prices F. O. B. Seattle or Portland, deduct 5c per pound from these prices.

Kale or Borecole

One ounce for 150 feet of drill.

	DELIVERED FREE			
	Pkt.	Oz.	$\frac{1}{4}$ lb.	1 lb.
EMERALD ISLE. See Specialties.....				
Tall Scotch. A hardy variety, growing about thirty inches high; very curly and a beautiful plant.....	.10	.15	.30	1.00
Siberian, or Dwarf German. A dwarf, compact plant with beautiful curled yellowish-green leaves.....	.05	.10	.35	.75
THOUSAND HEADED. See Farm Seeds Section.....	.05	.10	.25	.75
	.10	.10	.20	.40

Kohl-Rabi

One ounce for 300 feet of drill.

Early White Vienna. The standard variety for home or market. Very early; flesh white; skin greenish-white.....	.05	.20	.60	2.00
Early Purple Vienna. Similar to White Vienna, except that the skin is purple. The flesh is white and tender.....	.05	.20	.60	2.00

Leek

One ounce for 100 feet of drill.

Large American Flag. A very superior variety, producing large, thick stems of good flavor.....	.05	.15	.45	1.25
Musselburg. Grows to very large size, with broad leaves spreading like a fan.....	.05	.15	.45	1.25

LETTUCE

One ounce for 3,000 plants.

CURLED VARIETIES

LILLY'S FORCING. See Specialties.....	\$0.10	\$0.20	\$0.50	\$1.25
Early Curled Simpson. A popular market variety for forcing or very early planting outdoors. Forms a dense mass of finely curled leaves of excellent quality.....	.05	.15	.35	1.00
Black Seeded Simpson. Very large, loose heads of thin, tender, curly, yellow leaves.....	.05	.15	.35	1.00
Grand Rapids. A splendid forcing lettuce; large, beautifully curled, crisp and tender.....	.05	.15	.40	1.25
Early Curled Silecia. An excellent early, curled variety.....	.05	.15	.35	1.00

HEAD VARIETIES

DELICIOUS. See Specialties.....	.10	.20	.50	1.50
NONPAREIL HANSON. See Specialties.....	.10	.20	.50	1.50
WONDERFUL. See Specialties.....	.10	.20	.50	1.50
IMMENSITY. See Specialties.....	.10	.20	.50	1.50
Boston Market, or White Seeded Tennisball. A popular, small, compact head variety for early outdoor culture or for forcing.....	.05	.15	.40	1.25
Hanson Head. A handsome, large headed summer lettuce of excellent quality.....	.05	.15	.40	1.25
Deacon. A large, firm-heading variety for summer and fall use. Light green outside, creamy-yellow inside.....	.05	.15	.35	1.00
May King. This is a very hardy variety, and will stand much cold, damp weather. Can be planted outdoors or under glass, and in either case will produce fine heads much sooner than any other variety.....	.05	.15	.35	1.00
Black Seeded Tennisball. A hardy, very early, small, hard-headed variety for forcing or early outdoor culture.....	.05	.15	.35	1.00
Prizehead. A popular variety. Green tinged with red.....	.05	.15	.35	1.00
Paris White Cos. A popular old variety with long heads and narrow leaves. May be blanched by tying the leaves together.....	.05	.15	.35	1.00

Melon, Musk, or Cantaloupe

One ounce for 60 hills. 3 lbs. per acre.

IMPROVED ROCKY FORD. See Specialties.....	.10	.10	.40	1.25
Rocky Ford, or Netted Gem. The sweet and luscious green-fleshed melon that has become world-famous.....	.05	.10	.35	1.00
Casaba. The largest muckmelon grown; form oblong; flesh green and of good quality.....	.05	.20	.65	2.00
Ossage, or Miller's Cream. Large and round, with light green netted skin and salmon-colored flesh.....	.05	.10	.35	1.00
Nutmeg. A popular old variety. Skin deep green, finely netted; flesh greenish-yellow, sweet and sugary.....	.05	.10	.35	1.00
Extra Early Hackensack. Of large size and attractive appearance; skin netted; flesh green and very sweet.....	.05	.10	.35	1.00
Large Hackensack. An excellent green-fleshed, late variety; ends flattened; thick, irregular ribs and coarse netting; flavor sweet and delicious.....	.05	.15	.40	1.25
Early Jenny Lind. A small, round, very early melon; deeply ribbed and netted; flesh yellowish-green and of good flavor.....	.05	.10	.35	1.00

Market Gardeners and others requiring seeds in very large quantities will please give us a list of varieties and quantities wanted and we will be glad to quote special quantity prices.

Melon, Water

	DELIVERED FREE			
	Pkt.	Oz.	¼ lb.	1 lb.
One ounce for 30 hills. 4 lbs. per acre.				
SWEET AS HONEY. See Specialties.....	.10	.10	.35	1.25
KING AND QUEEN. See Specialties.....	.10	.10	.35	1.25
Cuban Queen. Very large, oval melons; striped; flesh red and of excellent quality	.05	.10	.25	.75
Cole's Early. An excellent early variety with thin rind, large heart, and flesh of fine texture and flavor.....	.05	.10	.25	.75
Dixie. Early, productive, and of good quality; a good shipper....	.05	.10	.25	.75
Ice Cream, or Fearless. Medium size, almost round; skin light green mottled; flesh scarlet; white seeded.....	.05	.10	.25	.75
Gypsy, or Georgia Rattlesnake. Oblong; skin mottled and striped; medium early; flesh crimson	.05	.10	.25	.75
Kleckley Sweet, or Monte Cristo. Large; oval; dark green mottled; rind thin; flesh sweet, crisp and sugary.....	.05	.10	.25	.75
Sweetheart. An early, oval melon; light green mottled; thin, tough, rind; flesh light red and of fine quality.....	.05	.10	.25	.75
Florida Favorite. Large, oval, striped; rind thin but hard; flesh crimson, sweet and melting.....	.05	.10	.25	.75
Lodi. A popular California variety. Fruit large, oblong, green, slightly mottled; rind thin but tough; flesh bright red and sweet; seeds white	.05	.10	.25	.75
Citron. Small and round; for preserves only.....	.05	.10	.25	.75

Mushroom Spawn

One brick for one square yard.

Lambert's Pure Culture Standard Mushroom Spawn. See Specialties.

Price per brick, F. O. B. Seattle or Portland:

1 brick, 25c; 5 bricks, \$1.00; 10 bricks, \$1.80; 25 bricks, \$4.25; 50 bricks, \$8.00; 80 bricks, \$12.00; 100 bricks, \$15.00; 160 bricks (one full case), \$22.40.

If spawn is to be shipped by parcel post, sufficient amount must be remitted to pay postage.

One brick weighs 1¼ to 1½ lbs.

Mustard

	DELIVERED FREE			
	Pkt.	Oz.	¼ lb.	1 lb.
Southern Curled. A large variety with fine curled leaves. Used for greens and salads.....	.05	.10	.25	.75
White English. Light green, tender leaves. Seed light yellow.....	.05	.10	.15	.40

Okra

Dwarf Green. The green pods are used in soups, stews, etc., to which they impart a rich flavor.....	.05	.10	.20	.60
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ONION

One ounce for 250 feet of drill. 5 lbs. per acre.

LONGKEEPER. See Specialties.....	\$0.10	\$0.35	\$1.00	\$3.00
WESTERN WETHERSFIELD. See Specialties.....	.10	.35	1.00	3.00
PRIZETAKER, SELECT. See Specialties.....	.10	.35	1.00	3.00
WHITE QUEEN, SELECT. See Specialties.....	.10	.35	1.00	3.00
Prizetaker. Of immense size, globular shape, and good quality. The skin is light yellow, the flesh pure white.....	.05	.30	.75	2.50
White Queen. A very small, pure white onion; used for pickling and for early green onions.....	.05	.30	.75	2.50
Extra Early Red Flat. Very early; medium size; flat; skin light red; flesh fine grained, white and mild.....	.05	.30	.75	2.50
Large Red Wethersfield. A very large onion, flattened in shape, with skin of a purplish-red color, and flesh purplish-white; rather strong flavored, but good, and an excellent keeper.....	.05	.30	.75	2.50
Australian Brown. Early; medium size; nearly globular in shape; very solid; of an attractive brown color and milk flavor.....	.05	.30	.75	2.50
Yellow Globe Danvers. A very popular variety, especially for market. Globular in form; very solid, and one of the best shippers; skin brownish-yellow; flesh fine grained, white, and mild.....	.05	.35	.90	2.75
Oregon Yellow Danvers. Similar to the Yellow Globe Danvers, except that it is flattened.....	.05	.35	.90	2.75
Yellow Flat Danvers. Early, very productive, and reliable; form round, flattened, small neck; thin, pale yellow skin; flesh white.....	.05	.35	.90	2.75
White Portugal, or Silver Skin. A splendid early, flat, white variety; one of the best for home use, and much grown by market gardeners for early green onions.....	.05	.35	.90	2.75
Southport Red Globe. A handsome, perfectly globular, purplish-red onion of large size; flesh white and of superior quality; a good keeper.....	.05	.35	.90	2.75
Southport White Globe. Very large, globular in form, with pure white skin and flesh; very handsome, productive and of fine quality.....	.05	.35	.90	2.75
Southport Yellow Globe. An excellent, large, globular, yellow onion, almost identical with Southport Red Globe except in color.....	.05	.35	.90	2.75
Yellow Dutch, or Strasburg. Similar to the Yellow Flat Danvers in shape, size and color. Popular for growing onion sets.....	.05	.35	.90	2.75
Italian Tripoli. A large white onion; globular in form; with mild, sweet, pearl-white flesh	.05	.35	.90	2.75

G. B. Lewis Co. See Supplies are the best. They are listed elsewhere in this catalog.

Onion Sets

One pound to 75 feet of drill. 400 lbs. per acre.

Yellow Danvers Bottom Sets. See Specialties. F. O. B. Seattle or Portland, 1 lb., 15c; 10 lbs., \$1.25. Write for prices on large quantities. Prices increase as the season advances.

Parsley

	DELIVERED FREE			
	Pkt.	Oz.	1/4 lb.	1 lb.
Champion Moss Curled. Densely crimped and curled dark green leaves. Beautiful for garnishing.....	.05	.10	.30	.90
Triple Curled. A popular dwarf variety, finely curled.....	.05	.10	.30	.90
Plain. A very hardy variety; leaves not curled.....	.05	.10	.30	.90

Parsnip

One ounce for 200 feet of drill. 6 lbs. per acre.

PALO ALTO. See Specialties.....	.10	...	.30	1.00
Hollow Crown. A heavy cropping variety; half-long; round, smooth, white and of fine texture and flavor.....	.05	.10	.25	.75
Long White Dutch. More productive than other varieties, but inferior in other respects.....	.05	.10	.25	.75

Prices shown for Peas do not include transportation charges. If Peas are to be shipped by parcel post, remittance must include a sufficient amount to pay postage at parcel post rates as shown on page 5.

PEAS

One pound to 100 feet of drill. 100 lbs. per acre.

EARLY VARIETIES

	F. O. B. Seattle or Portland		
	Pkt.	1 lb.	10 lbs.
GRADUS, or PROSPERITY. See Specialties.....	.10	.20	1.75
THOMAS LAXTON. See Specialties.....	.10	.20	1.75
WASHINGTON WONDER. See Specialties.....	.10	.20	1.75
LINCOLN. See Specialties.....	.10	.20	1.75
WORLD'S RECORD. See Specialties.....	.10	.20	1.75
Nott's Excelsior. Early and productive, with large pods well filled with wrinkled peas of good flavor. Height 14 inches.....	.10	.20	1.25
American Wonder. Of dwarf, compact growth, ten to twelve inches high. The peas are of good size, wrinkled, and of the finest quality.....	.10	.20	1.25
Little Gem. Fifteen inches high; a little later than American Wonder; peas wrinkled, sweet and delicious.....	.10	.20	1.25
Premium Gem. Similar to Little Gem.....	.10	.20	1.25
Alaska. Very early and hardy; two feet high; round, blue pods three inches long, filled with small, smooth, blue-green peas....	.10	.20	1.00

LATE, OR MAIN CROP VARIETIES.

Alderman. A splendid new variety, imported from England. Vines five feet high; pods are very large and well filled with wrinkled peas of fine flavor.....	.10	.20	1.50
Quite Content. Another imported pea, growing five to six feet high, and producing an abundance of immense pods, even larger than Alderman.....	.10	.20	1.50
Yorkshire Hero. An excellent main crop pea, growing about three feet high. The pods are well filled with large wrinkled peas of good flavor.....	.10	.20	1.00
Stratagem. Vines twenty inches high, strong and robust, requiring no support; peas dark green, wrinkled, rich and sweet.....	.10	.20	1.00
Dwarf Telephone. Height eighteen inches, vigorous and very productive.....	.10	.20	1.25
Telephone. A popular market gardener's variety. Height four and one-half feet; very productive; pods large; peas wrinkled and of splendid flavor.....	.10	.20	1.00
Champion of England. An old, popular, wrinkled variety of unexcelled flavor. Height five feet.....	.10	.20	1.00

PEAS—FIELD AND COW. See Farm Seeds Section.

Pepper

One ounce for 1,000 plants.

	DELIVERED FREE			
	Pkt.	Oz.	1/4 lb.	1 lb.
Large Bell, or Bull Nose. Early; large red fruit; very mild.....	.05	.25	.75	2.50
Golden Dawn. Similar to Large Bell, except that the color is golden-yellow.....	.05	.25	.75	2.50
Ruby King. The most popular variety. Very large, ruby-red, thick fleshed and very mild.....	.05	.25	.75	2.50
Long Red Cayenne. A late variety. Small, bright scarlet, cone-shaped pods used for pickling.....	.05	.25	.75	2.50

Market gardeners and others requiring vegetable seeds in very large quantities will please give us a list of varieties and quantities wanted and we will quote lowest possible quantity prices.

We do not pay transportation on Potatoes. If Potatoes are to be shipped by parcel post, or by freight or express to a station at which there is no agent, remittance must include a sufficient amount to pay transportation charges.

Potatoes

	per lb.	F. O. B. Seattle or Portland		
		10 lbs.	50 lbs.	100 lbs.
Irish Cobbler. See page 70.....	\$.05	\$.04	\$.03	
Bovee.....	.05	.04	.03	
Quick Lunch, or Noroton Beauty.....	.05	.04	.03	
Up To Date.....	.07	.06	.05	
Early Ohio.....	.05	.04	.03	
Carman No. 3.....	.05	.04	.03	
Sir Walter Raleigh.....	.05	.04	.03	

Artichokes

Jerusalem Artichokes. See page 71.....	.05	.04	.02 $\frac{1}{2}$
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Pumpkin

One ounce for 30 hills. 4 lbs. per acre.

	Pkt.	DELIVERED FREE		
		Oz.	$\frac{1}{4}$ lb.	1 lb.
Sugar, or Sweet Pie. A small, handsome and productive pie pumpkin of delicious flavor. A good keeper.....	.05	.10	.25	.75
Connecticut Field. A large, productive, orange-colored field pumpkin, generally grown for stock, but good for pies.....	.05	.10	.20	.50
Jumbo, or King of Mammoths. The largest pumpkin grown. Under favorable conditions it produces specimens weighing 200 to 250 pounds.....	.05	.10	.35	1.00
Mammoth Tours. An old favorite of very large size.....	.05	.10	.35	1.00
Cushaw. Almost white; has a curved neck, hard skin, and very solid flesh.....	.05	.10	.25	.75

RADISH

One ounce for 100 feet of drill. 10 lbs. per acre.

EARLY ROUND VARIETIES

CRIMSON GIANT. See Specialties.....	\$0.10	\$0.10	\$0.35	\$1.00
EARLIEST OF ALL. See Specialties.....	.10	.10	.30	.85
WHITE BALL. See Specialties.....	.10	.10	.30	.85
Early Scarlet Turnip Radish. A popular, small, early, bright red turnip-shaped radish.....	.05	.10	.25	.75
Early Scarlet Turnip White Tip. An excellent early round radish; scarlet with attractive white tip.....	.05	.10	.25	.80
French Breakfast. A general favorite; oval shape, bright scarlet with white tip.....	.05	.10	.25	.75
Early White Ball. Similar to Early Scarlet Turnip, except that it is pure white.....	.05	.10	.25	.75

EARLY LONG VARIETIES

WHITE ICICLE. See Specialties.....	.10	.10	.30	.85
White Vienna, or Lady Finger. Long and tapering; pure white; very attractive; mild and tender.....	.05	.10	.25	.80
Long Bright Scarlet. A standard, early, long, scarlet variety; six inches long; matures in about twenty-five days.....	.05	.10	.25	.75
Long Scarlet White Tip. Similar to the Long Bright Scarlet, with lower third of the root pure white.....	.05	.10	.25	.75
Half-Long Scarlet. Early; half-long; medium size; bright scarlet; flesh white, crisp and tender; an excellent market garden sort....	.05	.10	.25	.75

LATE VARIETIES

Chartier. A large, long, summer radish; crimson at the top, fading to white at the tip.....	.05	.10	.25	.75
White Strasburg. An excellent summer radish; five inches long; tapering; flesh and skin white.....	.05	.10	.25	.80

WINTER VARIETIES

China Rose Winter Radish. A splendid winter radish; about five inches long and two inches in diameter, largest at the bottom; color bright rose; flesh firm and crisp.....	.05	.10	.25	.80
Round Black Spanish. Roots round or top-shaped; skin black; flesh white; a good keeper.....	.05	.10	.25	.80
California White Mammoth. Pure white; about one foot long and two or three inches in diameter; flesh tender and crisp.....	.05	.10	.30	.90

Market gardeners and others requiring vegetable seeds in very large quantities will please give us a list of varieties and quantities wanted, and we will be pleased to quote lowest possible quantity prices.

Rhubarb, or Pie Plant

One ounce for 600 plants.

	DELIVERED FREE			
	Pkt.	Oz.	¼ lb.	1 lb.
Mammoth Victoria. The largest and finest cooking variety; has thick, red stalks; is vigorous and very productive.....	.05	.15	.50	1.50
Burbank's Crimson Winter. For winter forcing. With proper culture it will bear almost continuously during the entire year.....	.10	.75	2.00	7.50

Salsify, or Oyster Plant

One ounce for 75 feet of drill.

Mammoth Sandwich Island. The most popular variety, growing twice the size of any other, and resembling a parsnip in appearance. Very mild and delicately flavored.....	.05	.15	.50	1.50
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Spinach

One ounce for 100 feet of drill. 10 pounds per acre.

MAMMOTH VICTORIA. See Specialties.....	.10	.15	.25	.60
Thick Leaved Improved. For either fall or spring sowing. Produces large, thick, bright green, crumpled leaves of excellent quality. Very slow in running to seed.....	.05	.10	.20	.40
Prickly Winter. An exceedingly hardy variety for fall sowing; leaves long and pointed.....	.05	.10	.20	.40
Long Standing. An excellent compact variety with thick, fleshy, dark green leaves. It grows slowly, but remains a long time fit for use.....	.05	.10	.20	.40
Bloodsdales Savoy Leaved. A very early variety; hardy, and suitable for early spring use.....	.05	.10	.20	.40
Viroflay. Has very large, thick, dark green leaves; a favorite with market gardeners; for either fall or spring sowing.....	.05	.10	.20	.40

Squash

SUMMER VARIETIES

One ounce for 50 hills. 6 lbs. per acre.

Early Summer Crookneck. A popular early bush variety; deep yellow; densely warted; quality and flavor good.....	\$0.05	\$0.10	\$0.25	\$0.75
Mammoth Yellow Summer Crookneck. Similar to Early Crookneck, but larger and later.....	.05	.10	.25	.80
Mammoth White Bush Scallop. An early bush squash; large, often twelve inches in diameter; thick, and with deeply scalloped English Vegetable Marrow. Very popular in England, and can be grown equally as well here. They should be eaten when less than half grown, at which time the flesh is very tender, and may be cooked like other squash or fried like eggplant. Oblong in shape; color creamy-white.....	.05	.10	.30	.85
	.05	.10	.35	1.00

WINTER VARIETIES

One ounce for 20 hills. 4 lbs. per acre.

DELICATA. See Specialties.....	.10	.10	.30	1.00
HUBBARD. See Specialties.....	.10	.10	.30	1.00
Boston Marrow. A very popular squash for fall use; skin thin, reddish-yellow; flesh dry, fine grained and delicious.....	.05	.10	.25	.75
Fordhook. A desirable variety for either summer or winter use; oblong in form; eight to ten inches long; flesh thick, yellow and of fine flavor.....	.05	.10	.30	.90
Sibley, or Pike's Peak. Large, dark olive-green squashes, tapering to a point at the end; flesh light golden and of excellent quality.....	.05	.10	.35	1.00
Golden Hubbard. Similar to the old favorite, Hubbard, but the skin is golden red.....	.05	.10	.30	1.00
Mammoth Chili. The largest of all squashes, often weighing 200 pounds; flesh rich and fine flavored.....	.05	.10	.30	1.00

Sunflower

Mammoth Russian. Immense heads and large seeds. A splendid food for poultry.....	.05	...	...	.20
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Swiss Chard

LUCULLUS. See Specialties.....	.05	.10	.30	.85
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Tobacco

Connecticut Seed Leaf. Hardy; adapted to this climate.....	.05	.20	.60	2.00
Havana. Less hardy, but better flavor.....	.05	.40	1.20	4.00

LILLY'S SEEDS are tested, and if planted under favorable conditions will grow and produce satisfactory crops. Cultural directions are contained in the Crop Book, which will be furnished free with any order if requested.

TOMATO

One ounce for 1,500 plants. ¼ lb. per acre.

DELIVERED FREE

Pkt. Oz. ¼ lb. 1 lb.

PUGET SOUND SPECIAL. See Specialties.....	.10	.40	1.25	4.00
PUGET SOUND FORCING. See Specialties.....	.10	.40	1.25	4.00
SPARK'S EARLIANA. See Specialties.....	.10	.35	1.00	3.00
PONDEROSA. See Specialties.....	.10	.35	1.15	3.50
LIVINGSTON'S CORELESS. See Specialties.....	.10	.35	1.15	3.50
Early Michigan. A smooth, solid, perfectly shaped tomato. A favorite early variety for market gardeners.....	.05	.20	.65	2.00
Beauty. Early and prolific; medium size, smooth and solid; color purplish-red; fruits until late in the season.....	.05	.20	.65	2.00
Dwarf Champion. Dwarf and compact; requires no stake and may be planted close; fruit round, smooth, and ripens with little sunshine	.05	.25	.75	2.50
Early Baby. Very early; uniform in size and shape; color rich red; solid and of fine quality.....	.05	.25	.75	2.50
Favorite. A large, handsome, uniform shaped tomato; solid and smooth; ripens evenly.....	.05	.20	.65	2.00
New Stone. Large, handsome, and of good quality and color; very solid and a splendid shipper.....	.05	.25	.75	2.25
Atlantic Prize. An extra early variety of good size, smooth surface and fine quality	.05	.25	.75	2.50
Acme. An old, well known, early variety; medium size, smooth, solid and prolific; color purplish-pink.....	.05	.25	.75	2.50
Trophy. An old favorite, much esteemed for its productiveness and hardness	.05	.20	.65	2.00
Perfection. An old popular variety; early, medium size, smooth and productive; good color, and ripens evenly.....	.05	.20	.65	2.00
Red Cherry. Fruit only one to two inches in diameter; excellent for preserving	.05	.25	.75	2.50
Red Pear. Pear-shaped; two to three inches long; bright scarlet; used for preserves	.05	.25	.75	2.50
Yellow Pear. Small; pear-shaped; borne in great profusion; excellent for salads and cooking.....	.05	.25	.75	2.50
Yellow Plum. Oval-shaped yellow fruits, two inches in diameter...	.05	.25	.75	2.50

Turnip

One ounce for 150 feet of drill. 2 lbs. per acre.

SNOWBALL. See Specialties	.10	.10	.25	.75
EARLY WHITE MILAN. See Specialties.....	.10	.10	.25	.75
GOLDEN WEST. See Specialties.....	.10	.10	.25	.70
PETROWSKI. See Specialties.....	.10	.10	.30	1.00
Extra Early Purple Top Milan. White with purple top; somewhat flattened; flesh snow-white.....	.05	.10	.25	.70
Early White Flat Dutch. A standard early variety; flesh white and mild	.05	.10	.20	.60
Cowhorn. A long, white-fleshed turnip, growing half above ground; large, but of fine quality.....	.05	.10	.25	.75
Purple Top Strap Leaf. An old and popular variety; medium size; flesh white and of good quality.....	.05	.10	.20	.60
Purple Top White Globe. Globular shape, handsome and of fine quality, either for table or stock; early, productive and a good keeper	.05	.10	.20	.60
White Egg. Matures very quickly and is good for either spring or fall sowing; egg-shaped, white, very smooth, fine grained.....	.05	.10	.25	.65
Golden Ball, or Orange Jelly. One of the most delicious and sweetest of yellow fleshed turnips; not large, but firm and hard.....	.05	.10	.25	.70
Yellow Aberdeen. A fine, large, globe-shaped, yellow-fleshed turnip of fine quality, for either table or stock.....	.05	.10	.20	.60

Rutabaga, or Swedish Turnip

One ounce for 150 feet of drill. 2 lbs. per acre.

KING OF SWEDEN. See Farm Seeds Section.....	.10	.10	.25	.60
American Purple Top Improved.....	.10	.10	.25	.60
Skirving's Improved Purple Top	.10	.10	.25	.60
Sweet Russian	.10	.10	.25	.60
Monarch, or Tankard	.10	.10	.25	.60

It is difficult to make tomatoes mature properly on the Pacific Coast unless you know how, and grow the earliest varieties. LILLY'S CROP BOOK tells how to grow them. It will be furnished free with any order if requested.

We do not pay postage, express or freight charges on any goods except when so specified in this catalog. If seeds or other goods, except vegetable seeds, flower seeds, and few other goods which we list "delivered free," are to be shipped by parcel post, or by express or freight to a station at which there is no agent, a sufficient amount must be remitted to pay transportation charges. If vegetable seeds are to be shipped by express or freight, and charges paid at destination, or if an additional amount is remitted to pay postage, 50 per pound may be deducted from "delivered" price.

LILLY'S FLOWER SEEDS

A Choice Collection of the Finest Varieties of Flowers
Most Desirable for the West.

FLOWERS, shrubs and trees often make the difference between a habitation and a home, and it is surprising that there are so many unattractive habitations when so little expense and labor would transform them into real homes. It is so much easier to be cheerful among pleasing surroundings. Many of the prettiest and most satisfactory flowering plants are easily grown from seed, and are especially pleasing when tastefully arranged with regard to color, height and season of blooming and to harmonize with surroundings.

Our list of flower seeds is condensed for the reason that few of our customers care to make a collection of all the different varieties and are only confused with a long list to select from. We list only the seeds of plants which are desirable and are adapted to this locality.

Some flower seeds may be simply sown broadcast and will require little further attention, but some are quite difficult to get started, and the person who plants them all in the same manner, or in the manner that vegetable seeds would be planted, is liable to disappointment. Cultural directions will be found in the Crop Book, which we will furnish free with any order if requested.

In the following descriptions we show the height, color and season of blooming. We have also classed the plants as Annuals, Biennials and Perennials, dividing these into Tender, Half-hardy and Hardy. These descriptions are important to those who are not familiar with the plants, and will assist in choosing those which will be suitable.

Hardy Annuals may be sown outdoors in the fall or early spring, preferably fall. They bloom the following summer, and then die.

Half-hardy Annuals require an even temperature of at least sixty degrees to germinate the seed, and will not stand frost. For early blooms the plants must be started under glass or in the house, and not planted outdoors until danger of frost is past.

Tender Annuals must be grown in pots in greenhouse or in the house, and exposed outdoors only during the most favorable weather.

Biennials are best sown outdoors in September, and will bloom the following summer, after which they will die. If sown in spring they will not bloom until the next year.

Hardy Perennials seldom bloom the first year, but usually bloom the second and many succeeding years. They may be sown in spring, but are best sown outdoors in September.

Half-hardy Perennials require some protection during cold winter weather. The seed should be sown in boxes or pots, or outdoors late in spring.

Tender Perennials require protection during the greater part of the year.

The seed bed for flowers should be carefully prepared. The soil should be rich, consisting of a good proportion of sand and leaf mold, and should be very finely pulverized. The smaller seeds should be covered very lightly by sifting fine dirt over them, just enough to hide them. Water should be applied in a fine spray, and not too much of it.

For starting flowers or vegetables early in spring a hotbed is essential. Lilly's Crop Book gives instructions for building and operating a hotbed. Free with any order if requested.

Abronia

(Sand Verbena)

A very pretty, trailing, hardy annual, bearing verbena-like clusters of fragrant pink flowers early and continuously. Will grow in dry places where other plants would not thrive, and is valuable for covering barren banks, also for rockeries and hanging baskets.

No. 1018. *Abronia umbellata grandiflora*. Pkt., 5c; oz., 40c.

Adlumia

(Mountain Fringe. Allegheny Vine. Fumitory.)

A graceful hardy biennial climber, growing to a height of about fifteen feet, with attractive pale green foliage resembling Maidenhair Fern. It bears the first year from seed clusters of small tube-shaped, rose-colored flowers in great profusion.

No. 219. *Adlumia Cirrhosa*. Pkt., 10c.

Adonis

(Floss Adonis. Pheasant's Eye.)

A hardy annual, growing about one foot high, with fine-cut, feathery foliage, and crimson flowers.

No. 220. *Adonis*. Pkt., 5c; oz., 25c.

Ageratum

(Floss Flower.)

One of the very best bedding plants, covered with bloom from early summer until late in fall. They are hardy annuals of easy culture. The plants are neat, erect and bushy, six to eight inches tall and should be planted eight to twelve inches apart. The pretty brush-like flowers are borne in clusters, and are splendid for blue effects in the garden.

No. 439. *Little Dorrit*. The plant is six inches tall and a foot wide and is a perfect mass of blue flowers all summer. Pkt., 10c.

No. 411. *Imperial Dwarf Blue*. A splendid bedding variety, growing about eight inches high and covered with blue flowers. Pkt., 5c; oz., 40c.

No. 101. *Mexicanum, Mixed*. About eight inches high. Mixed colors. Pkt., 5c; oz., 25c.

Alyssum

(Sweet Alyssum.)

This dainty little plant is unexcelled for borders, beds, baskets, pots, rockeries, and for cutting. It is a hardy annual, grows about nine inches high, and is covered with spikes of small white flowers during the entire summer and fall. It may also be grown in pots in the house during the winter, where the exquisite fragrance of the pure white flowers is very pleasing.

No. 2. *Alyssum Benthami*. Pkt., 5c; oz., 25c.

Amaranthus

Strong growing and highly ornamental hardy annuals, chiefly valuable for their highly colored foliage. Very showy and effective for bedding and back-grounds. Three to four feet tall.

No. 270. *Amaranthus Candatus*. (Love Lies Bleeding.) Light yellowish-green foliage; long, drooping, blood-red flower spikes. Pkt., 5c.

No. 102. *Amaranthus Tricolor*. (Joseph's Coat.) The plant grows about three feet tall with brilliant colored leaves in variegated red, yellow, green, etc. Pkt., 5c.

ANTIRRHINUM

(Snapdragon.)

Unusually effective bedding displays are made with these unique, bright colored plants. They are half-hardy perennials, but as they bloom the first year from seed, are generally grown as annuals.

No. 921. *Lilly's Giant Flowering Black Prince*. The flowers of this splendid Snapdragon are very dark, rich, maroon color, and are of immense size and splendid texture and substance. They grow about two feet tall and bloom profusely until very late in the summer. Pkt., 10c.

No. 4. *Tall Varieties, Mixed*. A mixture of good tall varieties; all colors. Pkt., 5c; oz., 40c.

No. 104. *Dwarf Varieties, Mixed*. The best dwarf varieties and colors, mixed. Grows about six inches tall. Pkt., 5c; oz., 75c.

Aquilegia

(Columbine.)

A delightful hardy perennial especially adapted to the Pacific Coast. It grows about two feet high and bears early in spring, lasting for a considerable period, peculiar, interesting, pendent flowers in colors clear blue, white, rose, yellow, purple and striped. It thrives in partial shade and under the spray of a fountain or other moist location. It forms large clumps, and is desirable for permanent beds and borders.

No. 5. *Double. Mixed colors*. Pkt., 5c; oz., 50c.

No. 1052. *Single. Mixed colors*. Pkt., 5c; oz., 40c.

Arabis

(Rock Cress. Snow on the Mountain.)

Unexcelled for rockeries or edgings. Grows about six inches high, forming a spreading plant a foot or more in diameter, which, very early in spring, is completely covered with pure white flowers. It is a hardy perennial, easy to grow, and blooms the second year from seed.

No. 1035. *Arabis Alpina*. Pkt., 10c; oz., 75c.

Arctotis

(African Daisy.)

A handsome, hardy annual from Africa. The plants form bushes two feet or more in height and the same in breadth. The large round buds appear close to the ground at first, but soon rise on long, stout stems well above the foliage. The drooping buds open into large, shining white, daisy-like flowers with blue centers surrounded by a narrow golden circle, with reverse side of the petals a pale lilac. The flowers are especially valuable for cutting, the blooms lasting a week or more. The undeveloped buds may be cut and placed in water in a sunny window and will open up as well as they would on the bush.

The plant thrives best in bright sunshine, and bears blooms in abundance from early in July until late in fall.

No. 601. *Arctotis Grandis*. Pkt., 10c; oz., 50c.

LILLY'S

CROP BOOK gives cultural directions for flowers, vegetable and farm crops, also suggestions for fertilizing and caring for the crops. We will furnish it free with any order if requested.

The annual asters are among the most satisfactory flowering plants. From plants started under glass or in the house in March or April blooms may be had in July or August; or the seed may be planted outdoors in May and will produce blooms in September and October.

LILLY'S SUPERB ASTERS

THE CHOICEST VARIETIES

Produce Magnificent Blooms of This Most Satisfactory Annual

Crego's Giant Asters

These are the finest and largest of all Comet asters. The flowers are immense, often five inches or more in diameter, and are composed of long, wavy, twisted petals gracefully formed into loose, yet densely double, half-globes, equaling some of the finer Chrysanthemums.

The plants are of luxuriant, branching growth, two feet tall, and bearing twenty to thirty of these magnificent flowers on very long stems, which gives them added value for cutting. They keep in good condition longer than other varieties.

No. 1012. Crego's Giant Aster, White. Pkt., 10c.
No. 1013. Crego's Giant Aster, Pink. Pkt., 10c.
No. 1036. Crego's Giant Aster, Crimson. Pkt., 10c.
No. 1037. Crego's Giant, Lavender. Pkt., 10c.

Improved Victoria Asters

Magnificent flowers, double clear to the center, massive and showy, with regular overlapping petals. The plants grow eighteen inches tall and bear twenty-five to forty flowers each.

No. 109. All Colors, Mixed. Pkt., 10c.

LILLY'S Mixed Asters

A fine mixture of all the good varieties and colors.
No. 900. Mixed Asters. Pkt., 5c; oz., 75c.

Giant Comet

OSTRICH PLUME ASTERS

Medium early-flowering Comet Asters of immense size and great beauty. The plants are sturdy and compact, growing about one and one-half feet tall, and covered with blooms. The petals are long, narrow, twisted and turned backward, forming beautiful fluffy masses.

No. 935. Giant Comet, White. Pkt., 10c.
No. 936. Giant Comet, Rose. Pkt., 10c.
No. 937. Giant Comet, Blue. Pkt., 10c.
No. 938. Giant Comet, Lavender. Pkt., 10c.
No. 322. Giant Comet, Mixed colors. Pkt., 10c.

Semple's Branching Asters

Splendid late-flowering Branching Asters. They begin blooming about the first of September and continue to bloom profusely until killed by freezing weather. The plants are strong, branching, and grow eighteen inches to two feet tall. The flowers are large, very double, and are borne on long stems. Especially valuable for bedding.

No. 940. Semple's Branching, White. Pkt., 10c.
No. 941. Semple's Branching, Pink. Pkt., 10c.
No. 942. Semple's Branching, Lavender. Pkt., 10c.
No. 939. Semple's Branching, Mixed. Pkt., 10c.

Balsam

(Lady Slipper.)

Among the finest of the old favorites for either garden or pot culture. It is a half-hardy annual, and for early blooms the seed should be sown under glass in March; or it may be sown outdoors in May. The plants grow one and one-half to two feet tall, and should be set about eighteen inches apart.

No. 141. Double. Mixed Colors. Pkt., 5c; oz., 30c.

Bellis

(Double Daisy.)

Excellent border plants, about four inches high, bearing attractive double flowers all summer. It is a hardy perennial, but will bloom the following summer if the seed is sown in the fall or early spring.

No. 13. Bellis Perennis. Mixed colors. Pkt., 10c.

Calceolaria

Attractive tender perennials used largely in green-houses and conservatories. This large-flowering variety produces a great profusion of unique pocket-shaped flowers in yellow, maroon, crimson, white, etc., spotted and blotched.

No. 1031. Calceolaria Hybrida Grandiflora. Pkt., 25c.

Calendula

(Pot Marigold.)

One of the best and showiest free-flowering hardy annuals. It is of the easiest culture, thrives in almost any kind of soil, grows about one foot high, and produces an abundance of large, bright colored flowers in various shades of yellow from early summer until killed by frost. Excellent for beds and borders; also valuable for pot culture, blooming freely in winter and early spring.

No. 117. Mixed colors. Pkt., 5c; oz., 25c.

CANDYTUFT

(Iberis.)

The annual Candytufts are hardy, of the easiest culture, and are great favorites for beds and borders. The improved varieties are splendid for pots and for cutting. By sowing the seed outdoors in fall, again in spring, and at intervals during the summer, blooms may be had continuously from early spring until winter. To produce the finest spikes the plants should be transplanted.

No. 922. Empress. A grand variety, producing enormous spikes of bloom resembling a white Hyacinth. The spikes often measure seven inches long by two and one-quarter inches in diameter. The plant is about twelve inches high. Pkt., 10c; oz., 50c.

No. 39. White Rocket. Good spikes of pure white flowers. Pkt., 5c; oz., 25c.

Calliopsis

One of the showiest and most easily grown hardy annuals. The plants form perfect little bushes about two feet high and literally massed with bloom from early summer until killed by frost. Splendid for massing and for cut flowers. The flowers are in various shades of yellow, brown and maroon. By keeping the old flowers cut off the flowering season will be lengthened.

No. 116. Mixed colors. Pkt., 5c; oz., 35c.

Canary Bird-Vine

(Tropaeolum Canariense.)

A pretty, rapid-growing, half-hardy annual climber, attaining a height of ten to fifteen feet, and bearing little canary-yellow flowers resembling a bird with its wings half expanded.

No. 148. Pkt., 5c; oz., 25c.

CANTERBURY BELLS

(Campanula.)

Very ornamental garden plants of easiest culture. They are hardy biennials, flowering the second year from seed, two and one-half feet high, and producing large bell-shaped flowers of exquisite colors. The plants form perfect pyramids of bloom, bearing from one hundred to two hundred exquisite flowers for several weeks during the early summer. The "Cup and Saucer" varieties produce flowers three inches in length.

No. 15. Single, mixed colors.Pkt., 5c; oz., 25c.

No. 157. Double, Cup and Saucer type. Pkt., 10c; oz., 75c.

LILLY'S

Celosia

(Cockscomb.)

Odd, picturesque plants, bearing bright colored flowers or plumes resembling a cock's comb. Hardy annuals. Fine for massing or border work.

No. 17. *Celosia Cristata*. About one foot high, bearing large, highly colored combs. Mixed colors.Pkt., 5c.

No. 119. *Celosia Pyramidalis Plumosa*. Large flowered, feathered. Mixed colors.Pkt., 5c.

Centaurea

(Corn Flower. Bachelor's Button. Sweet Sultan.)

Among the most attractive and graceful of the old-fashioned flowers. They are hardy annuals of simple culture. There are several varieties, all growing one and one-half to two feet high, and are excellent for beds, borders, and for cut flowers.

No. 923. *Korenbloom*. (*Cyanus nana compacta Victoria*). A highly improved dwarf, compact, variety of Bachelor's Button, producing large azure-blue blossoms in great profusion.Pkt., 10c; oz., 50c.

No. 225. *Cornflower*. Bachelor's Button, Ragged Sailor, or Bluebottle. An old-fashioned favorite. Hardy annual. Two feet high.Pkt., 5c; oz., 30c.

No. 1016. *Royal Sweet Sultan*. (*Centaurea Imperialis*) The finest of all Sweet Sultans for cutting, lasting a long time in water. Beautiful, artistic, sweet scented flowers borne on long, strong stems. Mixed colors.Pkt., 10c; oz., \$1.00.

No. 1017. *Dusty Miller*. (*Centaurea Gymnocarpa*) Narrow, silver-gray foliage; purple flowers. Used for ribbon bedding, edgings, vases, etc. Half-hardy perennial. Eighteen inches high.Pkt., 5c; oz., \$1.00.

Chrysanthemums

The hardy annual Chrysanthemums are quite distinct from the Oriental Chrysanthemums grown in greenhouses and conservatories. These showy garden annuals form compact bushes about eighteen inches high and bear an abundance of attractive flowers which are very desirable for cutting.

No. 1058. *Coronarum*, Double, Mixed.Pkt., 10c.

Cineraria

Magnificent tender perennials, grown mainly in conservatories, window gardens or greenhouses. The flowers measure two to three inches in diameter and cover the plant with a sheet of bloom. The colors are white, blue, violet and crimson shades.

No. 19. *Cineraria Hybrida*, Mixed.Pkt., 25c.

Clarkia

One of the prettiest of the hardy annuals, and being a native of the Pacific Coast, is produced here in the greatest perfection. Seed sown in the fall will produce blossoms early the next spring. The plant grows about eighteen inches high and bears a profusion of bright rose, white and purple single and double flowers.

No. 21. *Clarkia Elegans*, Mixed.Pkt., 5c; oz., 20c.

The best fertilizers for flower gardens are Lilly's Lawn Dressing or Concentrated Fertilizer.

CARNATIONS

(Dianthus.)

These splendid half-hardy perennials are used for greenhouse florist's trade in winter and for garden decoration and cut flowers in summer. They are general favorites on account of their delicious fragrance and richness of color. The Marguerites are most popular for outdoor culture. From plants started early under glass or in the house blooms may be had the first summer or fall.

No. 16. Mixed Double Varieties.....Pkt., 10c.

No. 419. Choice Double Varieties, Mixed.

Pkt., 25c.

No. 162. Giant Perpetual. An extra choice mixture of best double varieties.....Pkt., 25c.

No. 402. Marguerite, White. Strong growers; free flowering; especially desirable for garden.

Pkt., 10c.

No. 284. Marguerite, Mixed Colors...Pkt., 10c.

No. 161. Grenadin. A beautiful, early, dwarf variety. Sweet scented, double, scarlet flowers.

.....Pkt., 10c.

Cobaea Scandens

(Cups and Saucers Vine.)

A half-hardy climbing perennial, generally treated as an annual, attaining a height of twenty to thirty feet the first season. It has large leaves and large trumpet-shaped flowers which are green at first, turning to bright purplish-blue.

No. 120. Cobaea Scandens.....Pkt., 5c; oz., \$1.50.

Cosmos

One of the notable fall flowers. The plants grow four feet tall and bear a multitude of beautiful, large, single flowers in pure white, pink and crimson. They are hardy annuals.

No. 282. Autumn Pride. A highly improved variety bearing very large flowers in mixed colors.....Pkt., 5c; oz., 35c.

No. 1032. White.....Pkt., 10c; oz., 50c.

No. 1033. Pink.....Pkt., 10c; oz., 50c.

No. 1034. Red.....Pkt., 10c; oz., 50c.

Dianthus

(Pinks.)

This favorite family embraces some of the most beautiful and sweet scented flowers, producing a great variety of pleasing colors and shades. They are hardy annuals, and will flower the first season from seed sown outdoors early in spring, continuing to bloom during the entire season. Height one foot. Excellent for cutting and bedding.

No. 122. Japanese Pinks. Finest single flowered Japanese Pinks, mixed.Pkt., 5c; oz., 50c.

No. 123. Diadem Pinks. Large, Double Japanese Pinks. Mixed colors.....Pkt., 5c; oz., 30c.

No. 28. Chinese Pinks. A mixture of the choicest varieties.Pkt., 10c; oz., 75c.

No. 288. May Pinks. The old-fashioned single flowered garden or border pink. .Pkt., 5c; oz., 25c.

Dahlia

Although Dahlias are generally grown from bulbs, they may be grown from seed, and if the seed is sown early in spring will bloom the following fall, producing large single flowers in a gorgeous array of colors and markings that will be interesting and pleasing.

No. 924. Giant Annual Dahlia....Pkt., 10c.

Daisy

(Chrysanthemum Leucanthemum.)

This splendid hardy perennial is a great favorite for bedding and cut flowers. The plants grow two and one-half feet in height and bear magnificent single white flowers with yellow centers on stems eighteen inches or more in length.

No. 1004. Shasta Daisy.....Pkt., 10c.

Digitalis

(Foxglove.)

Hardy perennials, blooming the second year from seed, and especially adapted to this locality. They grow three to five feet tall and produce freely long spikes of Gloxinia-like flowers in various colors. Splendid for permanent beds, masses and back-grounds. Thrives best in a cool, shady location.

No. 165. Mixed Colors.....Pkt., 5c; oz., 50c.

Echinocystis

(Wild Cucumber.)

One of the quickest growing hardy annual vines. The foliage is dense, and it is one of the best vines for covering trellises, tree trunks, fences, or any place where a quick, but not permanent growth is desired. A profusion of fragrant white flowers is followed by an abundance of ornamental prickly seed pods.

No. 995.....Pkt., 10c; oz., 25c.

ESCHSCHOLTZIA

(California Poppy.)

The state flower of California, and a hardy annual of striking character, both in form and color, bright, rich, orange-yellow. The plants grow about one and one-half feet in height, with attractive silvery foliage, branching freely and producing large poppy-like flowers lavishly from spring until late fall. They are most effective when grown in beds of considerable size, over which the seed may be thinly sown broadcast and lightly raked in. It is very hardy and the seed may be sown almost any time and in any manner. From seed sown in fall or early spring blooms will be had early the following summer.

No. 192. True California Poppy. Orange-yellow. . . Pkt., 5c; oz., 25c.

No. 167. White Eschscholtzia. Creamy-white. . . Pkt., 5c; oz., 20c.

Gaillardia

A showy, hardy annual of the easiest culture. The plants grow in compact, bushy form, about one foot high and the same in breadth, bearing freely until late in fall, large, brilliant flowers in red and yellow, blended and shaded, on long slender stems. Splendid for borders and cut flowers.

No. 444. Annual Gaillardia. Single, Mixed. . . Pkt., 5c; oz., 50c.

Godetia

An attractive hardy annual, of compact growth, about ten inches high, bearing a profusion of satiny, cup-shaped flowers in red, pink and white, shaded and blended. Valuable for bedding and massing.

No. 494. Semi-dwarf varieties; mixed colors. Pkt., 5c; oz., 25c.

Gourds

Rapid growing half-hardy annual climbers. The ornamental foliage makes them useful for covering arbors, fences, stumps, etc., and the oddly shaped and highly colored fruits make them interesting.

No. 476. Mixed varieties. Pkt., 5c; oz., 15c.

Gypsophila

(Baby's Breath.)

Very pretty free-flowering plants, of easy culture. There are both annual and perennial varieties, both of which are graceful and delicate, and of special value for mixing with other flowers in bouquets.

No. 925. Snowflake. (Gypsophila elegans alba pura) An improved large-flowering hardy annual variety, producing graceful sprays of pure white blossoms. Grows about two feet high. Pkt., 10c; oz., 25c.

No. 376. Gypsophila Elegans, Mixed. Hardy annual. Two feet high. Mixed colors. Pkt., 5c; oz., 20c.

No. 918. Gypsophila Paniculata. Hardy perennial. White. Plants two and one-half feet high. Pkt., 10c; oz., 30c.

Heliotrope

A half-hardy perennial, flowering during the whole season. It is a splendid bedding plant and its delightful perfume makes it a favorite for bouquets and for pot culture during the winter. Height two feet.

No. 127. Choice Mixed. Good varieties and colors, mixed. Pkt., 10c.

HOLLYHOCK

One of the most majestic of hardy plants, and unequalled for planting among shrubbery or for backgrounds for other plants. They grow six to ten feet high and bloom for a long period. The tip may be pinched off when they reach the desired height, thus inducing development of branches and forming a bush.

No. 961. Lilly's Annual Everblooming Hollyhock. This splendid variety is a hardy annual, and if planted early will begin booming in July or August. The diversity of forms and colors among the flowers affords many delightful surprises. Some of the flowers will be densely double, others semi-double, and others single, all being of the most beautiful colors and shades. Pkt., 10c.

No. 37. Double Hollyhocks. The best double perennial hollyhocks in mixed colors. Pkt., 10c.

LILLY'S CROP BOOK tells how to make and maintain a lawn. Free with any order

Humulus

(Japanese Hop.)

A very rapid half-hardy annual climber, attaining a height of twenty feet in a few weeks. The foliage is luxuriant, making a dense covering for verandas, trellises, etc.

No. 412. **Japanese Hop.** (*Humulus Japonicus*) Luxuriant dark green foliage.Pkt., 5c.

No. 413. **Variegated Japanese Hop.** (*Humulus Japonicus folis variegatis*) Leaves liberally striped and blotched with silvery white and gray on deep green.Pkt., 10c.

Ipomoea

(Moon Flower Vine. Evening Glory.)

The most rapid growing of flowering half-hardy annuals, quickly attaining a height of ten to fifteen feet, producing a dense mass of heart-shaped leaves which form a background for a great profusion of beautiful large flowers which open at sunset and close the next morning.

No. 959. **Evening Glory.** (*Ipomoea Bona Nox*) Bears abundantly, large, rosy-lilac flowers which open in the evening.Pkt., 10c.

No. 1056. **Moon Flower Vine.** (*Ipomoea Maxima*) The vines make a wonderful growth and are covered with large, pure white, fragrant flowers.Pkt., 10c.

Kochia

(Summer Cypress. Belvidere.)

A hardy annual which has the appearance of a compact evergreen shrub. It has light green feathery foliage which in the fall changes to rich crimson. Most effective for the center of a bed or for garden decoration. Height about two feet.

No. 1029. **Kochia Trichophylla**....Pkt., 10c.

Kudzu Vine

(Pueraria Thunbergiana.)

An immensely vigorous vine, producing stems fifty feet long in a season after it has become well rooted. At home, in Japan, it is covered with clusters of fragrant, sweet pea shaped, purple flowers. In this country it is an uncertain bloomer, but covers everything in reach with its luxuriant foliage. The plants die down in winter, but the roots throw out new shoots in spring.

No. 994. **Pueraria Thunbergiana**....Pkt., 10c.

Linum

(Flowering Flax.)

A hardy annual, about one and one-half feet high, slender and graceful, with smooth stems and bright red flowers, which are borne in great profusion and long duration. An effective and showy bedding plant. Sow seed in spring in bed where it is to remain.

No. 243. **Linum Grandiflorum Rubrum**, Pkt., 5c.

Lupinus

Ornamental, free flowering, hardy annuals, growing two to three feet high, bearing richly colored pea-shaped flowers on long, graceful spikes.

No. 46. **Mixed colors**....Pkt., 5c.

LARKSPUR

(Delphinium.)

The Larkspurs are among the most popular of garden flowers. Seed of the hardy annual varieties sown in the open ground early in spring will produce flowering plants early in July and give a continuous succession of flowers until late in fall. They are handsome in beds, shrubbery borders, or for cut flowers.

No. 927. **Lilly's Giant Larkspur.** A splendid hardy annual Larkspur, growing only one foot high and producing giant, double, hyacinth-like blooms in a variety of charming colors.Pkt., 10c.

No. 208. **Annual Larkspur.** Tall hardy annual Larkspur growing two to three feet high. Mixed colors.Pkt., 5c.

No. 1057. **Perennial Larkspur.** (*Delphinium Elatum Hybridum fl. pleno.*) Hardy perennial Delphinium growing three to five feet high and bearing flowers in various shades of rich blue.Pkt., 10c.

Lobelia

Pleasing half-hardy annuals, growing four to six inches high and forming compact little bushes literally covered with small, bright flowers during the entire season.

No. 195. **Emperor William.** A very dwarf, compact variety, completely covered with white, blue-margined flowers from June to November. Pkt., 10c.

No. 196. **Crystal Palace.** Compact plants, dark foliage and rich deep blue flowers.Pkt., 10c.

No. 304. **Gracilis.** A trailing variety with light green foliage and light blue flowers.Pkt., 5c.

Lychnis

(Rose Campion. Jerusalem Cross.)

Handsome hardy perennial plants growing two to three feet high and bearing bright scarlet flowers. Excellent for massing in beds and borders. Will bloom the first year if seed is sown early.

No. 47. **Lychnis Calcedonica**....Pkt., 5c.

Marigold

(Tagetes.)

The African and French Marigolds are favorite free-flowering hardy annuals of easy culture. The African varieties grow two to three feet tall, bear large yellow or orange-colored flowers, and are adapted for large beds or mixed borders. The French varieties are dwarfer in growth, with beautiful striped flowers three to four inches in diameter, and are better suited for bedding and pot culture.

They succeed best in light soil with full exposure to the sun. Either variety is splendid for cut flowers.

No. 409. **Tall Double African Marigolds.** (*Tagetes erecta fl. pleno.*) About two feet high with flowers three to four inches in diameter in shades of yellow and orange.Pkt., 5c.

No. 410. **Tall Double French Marigolds.** (*Tagetes patula fl. pleno.*) One and one-half feet high with large double flowers in mixed colors.Pkt., 5c.

No. 146. **Dwarf Double French Marigolds.** (*Tagetes patula nana fl. pleno.*) One foot high with large flowers in mixed colors.Pkt., 5c.

MIGNONETTE

No garden is complete without this old favorite, sweet scented, hardy annual. The plants grow a foot or more in height, bearing pyramidal-shaped flower spikes about six inches long, made up of thickly set florets which are exceedingly fragrant. Sowings made in April and again in July will keep up a succession of bloom during the entire season. Valuable for bedding or borders, also for pot culture.

No. 420. Parson's White. A tall variety with large, almost pure white spikes. Very fragrant.Pkt., 5c; oz., 20c.

No. 252. Golden Queen. Compact plant with large spikes of very fragrant golden-yellow flowers. .Pkt., 5c; oz., 30c.

No. 139. Reseda Odorata. The old-fashioned Sweet Mignonette.Pkt., 5c; oz., 15c.

Mimulus

Showy, profuse-flowering, half-hardy perennials, blooming the first year from seed if sown early under glass. Fine for greenhouse or moist, shady places outdoors.

No. 928. Hose-in-Hose. (*Mimulus quinquevulnerus maximus duplex*) A new five-spotted *Mimulus* with extra fine flowers; sulphur ground spotted with scarlet and pink.Pkt., 10c.

No. 49. Musk Plant. (*Mimulus Moschatus*) Very fragrant. Small yellow flowers spotted with brown. The plants are trailing, and are fine for hanging baskets and window gardens.Pkt., 5c.

No. 50. Monkey Flower. (*Mimulus tigrinus*). Curiously shaped yellow flowers, spotted like a tiger's skin. Grows about eight inches high.Pkt., 5c.

Mina

A half-hardy climbing annual attaining a height of eighteen to twenty feet. The buds are a vivid red, turning to orange-yellow before opening, and the flowers when fully opened are creamy-white, covering the plant from bottom to top. The seed should be planted early under glass.

No. 384. Mina Lobata.Pkt., 10c.

Myosotis

(Forget-Me-Not.)

Hardy perennials and annuals, growing six to twelve inches high and bearing pretty little star-like flowers in clusters on long stems. The plant thrives best in a cool, moist location, and blooms the first year from seed if sown early.

No. 310. Lilly's Victoria Dwarf Forget-Me-Not. A very beautiful hardy biennial variety; of dwarf, bushy habit, bearing large clusters of the brightest azure-blue flowers on long, graceful stems, rendering them splendid for cutting.Pkt., 5c.

No. 53. Myosotis Azorica. A hardy annual of compact growth, bearing an abundance of flowers in various shades of blue.Pkt., 10c.

No. 1054. Myosotis Palustris. The true Forget-Me-Not. A hardy perennial of strong, sturdy growth, with beautiful clear blue flowers.Pkt., 10c.

Mirabilis

(Marvel of Peru. Four O'Clock.)

A perennial in warm climates, but generally grown as a half-hardy annual in this locality. The plant is two feet high, erect and bushy, bearing throughout the summer hundreds of large, white, yellow, crimson, or striped flowers. The flowers are shaped like the Morning Glory, and open late in the afternoon.

No. 51. Mirabilis Jalapa.Pkt., 5c.

MORNING GLORY

Well known hardy climbing annuals, growing about fifteen feet high and bearing pretty flowers in a variety of colors and tints, fully expanded only in the morning. Of easy culture and quick growth.

No. 600. Imperial Japanese Giant Morning Glory. Of remarkable size. The vines present a beautiful wall of luxuriant foliage thickly covered with flowers three to four inches in diameter and in a great variety of shades and markings.Pkt., 10c.

No. 41. Convolvulus Major. The old-fashioned Morning Glory. Makes a growth of ten to twelve feet. Mixed colors.Pkt., 5c.

No. 23. Convolvulus Minor. A dwarf or bush variety, growing about one foot high, bearing flowers the same as the tall variety.Pkt., 5c.

Lilly's Fertilizers will make sturdier plants and larger and brighter blooms.

LILLY'S

CONCENTRATED
FERTILIZERwill improve size
and color of
your Flowers.

LILLY'S Giant-Flowering Nasturtiums

Bloom Profusely the Entire Season

NASTURTIIUMS are among the most satisfactory and easily grown annuals, and there is nothing more pleasing than the harmonious blending of the various shades of green, yellow, brown and red in a border or bed of Dwarf Nasturtiums, or a trellis or wall covered with the climbers.

They are especially adapted to the climate of the Pacific Coast and with very little care the largest and most perfect blooms may be had from early summer until late in the fall.

Climbing Nasturtiums

No. 901. Zanderi Nigrum. (Roi des Noirs, or King of the Blacks.) Very dark red. Dark foliage.

No. 903. Golden Queen. Pure golden-orange.

No. 904. Lilli Schmidt. Orange-scarlet.

No. 905. Giant of Battles. Light yellow, spotted with bright red.

No. 906. Pearl. Creamy white.

No. 263. Coccineum. Scarlet.

Pkt., 5c; oz., 10c, postpaid.

No. 262. **LILLY'S ROYAL MIXED, TALL.**

A splendid mixture of the best varieties, and including all the harmonizing colors.

Pkt., 5c; oz., 10c; lb., 50c, postpaid.

Dwarf Nasturtiums

No. 907. Vesuvius. Salmon-rose. Dark foliage.

No. 908. Dwarf Pearl. Creamy white.

No. 909. Ruby King. Ruby-red. Dark leaved.

No. 910. Spotted King. Dark yellow, brown spotted, with dark foliage.

No. 911. Chameleon. Cream-white bright scarlet spotted, with dark scarlet edges. Dark leaves.

No. 264. Empress of Indian. Brilliant dark scarlet. Very dark foliage.

Pkt., 5c; oz., 10c; postpaid.

No. 929. Queen of Tom Thumbs. A magnificent bedding variety, bearing large, brilliant scarlet, velvety flowers, and variegated foliage.

Pkt., 10c; oz., 25c; postpaid.

No. 87. **LILLY'S ROYAL MIXED, DWARF.**

The choicest dwarf varieties; similar to the Royal Mixed, Tall, except that the plants are of dwarf, bushy growth, suitable for bedding or borders.

Pkt., 5c; oz., 10c; lb., 65c; postpaid.

LILLY'S CROP BOOK gives cultural directions, and will be furnished with any order.

Nemophila

(Love Grove.)

Pretty hardy annuals, growing about six inches high and bearing abundantly from early spring until late summer, showy bell-shaped flowers in white and various shades of blue. Thrives best in a cool, moist location, and is fine for beds, borders window boxes, pot plants and cut flowers.

No. 54. Mixed colors.....Pkt., 5c.

Nigella

(Love-in-a-Mist. Devil-in-a-Bush.)

Lovely hardy annuals, growing in oval bush form about one foot in height. In the finely cut fern-like green foliage nestle numerous large double flowers of light blue and white.

No. 248. *Nigella Damascena*.....Pkt., 5c.

Nicotiana

(Flowering Tobacco.)

Showy and profuse flowering half-hardy annuals growing two to three feet high, of branching habit, and giving a continuous display of bright colored, fragrant flowers in clusters during the entire summer and fall.

No. 825. *Nicotiana Sanderae*. This splendid hybrid gives a gorgeous display in a great variety of colors during the entire season.Pkt., 15c.

No. 247. *Nicotiana Affinis*. Delightfully sweet scented; pure white tubular flowers.....Pkt., 5c.

No. 447. *Nicotiana Sylvestris*. A most effective plant, either with other plants in beds or as single specimens. The plants are pyramidal in shape, four feet high, with pure white, fragrant flowers in loose, drooping heads.....Pkt., 5c.

PETUNIAS

For outdoor decoration or house culture few plants equal the *Petunia* in effectiveness. They commence flowering early and continue a sheet of bloom throughout the whole season. They are half-hardy annuals, and the single varieties are very easy to grow, requiring only good soil and a sunny location. The double hybrid varieties are more difficult to grow and should be started under glass. On account of having to be hand pollinated, the seed of the hybrid varieties is very expensive.

No. 65. **Large Flowered Fringed Double Petunias**. This is the highest development of the *Petunia*, improved by selection and artificial pollination until it little resembles the old varieties. This seed will produce a large percentage of splendid double flowers, the balance being immense, fringed, single flowers of the most beautiful colors and tints.Pkt., 25c.

No. 66. **Choice Double Hybrid Petunias**. Some of the choicest hybrid varieties and colors mixed. As is well known, double *petunia* seed produces only a portion of double flowers. The weaker plants should be carefully saved, for those plants will produce the finest double flowers.Pkt., 25c.

No. 61. **Choice Single Petunias**. A choice mixture of fine single varieties and colors. Single *Petunias* are easy to grow, and the seed may be sown outdoors after danger of frost is past.Pkt., 5c.

PHLOX

For beds and massing, nothing can surpass the beautiful hardy annual *Phloxes*. They produce immense trusses of large, brilliant flowers of a great variety of colors and shades throughout the summer. They are very easy to grow, and thrive in most any kind of soil if given a sunny position. The seed may be sown outdoors early in spring, and in a few weeks the plants will be covered with blooms.

No. 336. **Lilly's Star Phlox**. The beauty and brightness of this variety cannot be over praised. The plants are dwarf, about twelve inches high, and are lavishly covered with large umbels of star-shaped flowers of the most brilliant colors.Pkt., 5c.

No. 919. **Lilly's Large Flowering Phlox**. (*Phlox Drummondii Grandiflora*). This is the finest type, having the largest heads of bloom and the largest individual flowers. The plants are of strong, sturdy growth, attaining a height of about fifteen inches. Makes a very showy bed or border. This mixture contains all the most beautiful colors and shades.Pkt., 10c.

No. 67. **Phlox Drummondii, Mixed**. The flowers are not so large as those of the *grandiflora* type, but are just as bright colored and free blooming. The plants are about fifteen inches high.Pkt., 5c.

No. 931. **Dwarf Phlox**. This variety is of dwarf, compact habit, growing only six or eight inches high but with flowers nearly as large as the taller varieties.Pkt., 10c.

Poppies

Nothing is easier to grow and few flowers are more pleasing than poppies. In brilliancy of color, grace of stem, airiness of poise and delicacy of texture they are unexcelled. They are hardy annuals and perennials and may be sown very early in spring in the beds where they are to remain, as they do not transplant well.

No. 314. **Shirley Poppy**. A charming hardy annual Poppy with large fluted and crinkled flowers in a variety of forms, colors and tints.Pkt., 5c; oz., 25c.

No. 57. **Carnation Poppy**. Splendid double fringed flowers. Mixed colors. Hardy annual.Pkt., 5c; oz., 25c.

No. 55. **Peony Flowered Poppy**. Large, showy, double, globular flowers in various bright colors. Hardy annual.Pkt., 5c; oz., 15c.

No. 268. **Tulip Poppy**. Large, bright scarlet, tulip-shaped single flowers. Hardy annual.Pkt., 10c; oz., 75c.

No. 58. **Umbrosum Poppy**. Brilliant vermilion with black spots; large single flowers. Hardy annual.Pkt., 5c; oz., 15c.

No. 341. **Iceland Poppy**. This is a hardy perennial Poppy, but will bloom the first year from seed. They bear an endless profusion of graceful, delicate, single flowers, with petals like tissue paper, in a variety of pretty colors.Pkt., 10c; oz., 75c.

No. 1030. **Oriental Poppy, Mixed Hybrids**. Hardy perennials, producing immense flowers in gorgeous colors.Pkt., 10c; oz., 75c.

No. 351. **Mixed Poppies**. All hardy annual varieties; mixed.Pkt., 5c; oz., 20c.

LILLY'S SUPERB PANSIES

Choicest Varieties

Magnificent and Continuous Blooms

NO HOME in the Pacific Northwest is complete without a bed of Pansies, for our cool, moist climate is ideal for these beautiful flowers, and in no other locality do they produce such splendid blooms and so continuously from early spring until winter.

Although Pansies have always been great favorite, it is only within recent years that they have attained their present size and perfection.

The Pansy is a hardy perennial, thriving best in a cool, moist location. The largest blooms are produced during the cool months in spring and fall; during the warm summer months the blooms will be small. Abundant irrigation will produce larger flowers during the summer, but care must be taken that the water is warm, for the plants cannot stand the shock of cold water.

For early spring bloom, the seed may be sown outdoors about the first of September. Spring sown seed will produce blooms the following fall. The plants will produce better blooms if transplanted two or three times; in the permanent bed they should be set six to twelve inches apart. Although they are perennials, it is best to start new plants every year.

No. 89. Fine Mixed English Pansies. Finest varieties and colors of English Pansies, mixed. The plants are of compact habit..... **Pkt., 5c**

No. 90. Giant Flowered French Pansies, Mixed. A fine mixture of large flowering French varieties. All colors..... **Pkt., 5c**

No. 91. Odier, or Blotched Pansies. A fine strain of this large flowered type. The blossoms are round and the petals blotched at the base and distinctively margined at the edge. Mixed..... **Pkt., 25c**

No. 92. Giant Trimardeau, Mixed. A splendid type of immense size, distinct shape and beautifully marked. The plants are deep rooted, enabling them to withstand drought, hardy and robust..... **Pkt., 10c**

No. 94. Lord Beaconsfield. A very large Pansy with upper petals white and lower petals purple. **Pkt., 10c**

No. 95. Snowflake. Large; satiny-white with light yellow center..... **Pkt., 10c**

No. 96. White Trimardeau. A very large, white Pansy with three purple blotches..... **Pkt., 10c**

No. 176. Silver Edged. Dark purple edged with white. Very fine..... **Pkt., 10c**

No. 177. Cassier's Large Flowered Blotched. The largest flowered class of blotched Pansies. The flowers are round and are blotched at base of petals. Very showy. Mixed colors..... **Pkt., 25c**

No. 178. Faust, or King of the Blacks. The darkest colored Pansy, almost black. Very large. An extra fine strain..... **Pkt., 10c**

No. 179. Gold Margined. Purple with gold border. Very showy..... **Pkt., 5c**

No. 203. Emperor William. Cornflower-blue; immense size and very showy..... **Pkt., 10c**

No. 429. Goldelse, or Yellow Gem. Pure golden-yellow; large..... **Pkt., 10c**

LILLY'S COLOSSAL MIXED PANSIES

This is a splendid mixture of the choicest large-flowering varieties and the most beautiful colors and markings.

No. 930. Lilly's Colossal Mixed. **Pkt., 25c**

To grow Pansies successfully requires some care; for cultural directions see Lilly's Crop Book.

Portulaca

(Sun Plant)

A brilliant, hardy annual, growing about six inches high, and thriving in warm, dry, sunny situations. Excellent for low beds and borders, and for sowing on exposed banks where other flowers would not thrive. The colors range through all shades of red, yellow, pink, striped, white, etc.

No. 69. Single. Mixed colors. Pkt., 5c; oz., 45c

No. 70. Double. Mixed colors. Pkt., 5c

PRIMROSE

(Primula)

Primroses are among the most charming of perennials for winter and spring decoration in the house and conservatory, being splendid winter blooming pot plants. The hardy varieties are also excellent for beds and borders, especially on the Pacific Coast, where they may be grown outdoors without protection.

No. 72. Chinese Primrose. A splendid mixture composed of the finest fringed, free-flowering, double, Chinese Primroses. Half-hardy perennials. Pkt., 25c

No. 73. Primula Auricula. A dwarf, hardy plant, splendid for rockeries, borders or pots; bearing clusters of large, single, fragrant flowers in a variety of colors. Pkt., 25c

No. 74. Japanese Primrose. Hardy and robust plants, three feet high, bearing for a long period, large trusses of bright, showy flowers. Pkt., 10c

No. 75. Primula Veris. The early, spring flowering, old-fashioned, border primrose. Pkt., 10c

No. 315. Primula Obconica Grandiflora. Bears trusses of large, fringed flowers. Half-hardy perennial. Mixed colors. Pkt., 25c

Pyrethrum

No. 76. Golden Feather. Pyrethrum Partheniifolium (Aureum). A hardy perennial with bright, golden-yellow foliage; much used for edging and borders.

Pkt., 5c

No. 342. Pyrethrum Roseum Hybridum. Hardy perennial, bearing large, daisy-like flowers ranging in color from light pink to deep red, with bright yellow centers. Blooms in May and June and again in fall. One of the most graceful and long-lasting cut flowers. Two feet tall. Pkt., 10c

Ricinus

(Castor Oil Bean)

Ornamental half-hardy annual foliage plants of luxuriant and rapid growth, attaining a height of six to twelve feet, with brilliant colored fruit, producing a tropical effect. Fine for massing or for center for beds.

No. 140. Castor Oil Bean. Pkt., 5c

Salpiglossis

(Painted Tongue)

A great favorite among the half-hardy annuals because of its easy culture and beautiful almost orchid-like flowers which are produced from early summer until late fall. Three feet high.

No. 406. Mixed colors. Pkt., 5c

Salvia

(Flowering Sage)

Favorite bedding and border plants where bright colors are desired. They are half-hardy perennials, blooming the first year from seed if sown early. The plant is bushy, grows three feet high and bears profusely during the summer and fall very fragrant flowers in large drooping spikes.

No. 920. Scarlet Sage. (Salvia Splendens.)

Large spikes of the most intense glistening scarlet. Produces a gorgeous effect in a bed, and is splendid in working out color schemes if properly used. Pkt., 5c

No. 142. Blue Sage. (Salvia Patens.) Similar to Scarlet Sage in every way except that the flowers are the brightest blue. Pkt., 15c

Scabiosa

(Mourning Bride)

This splendid hardy annual is the old favorite, Mourning Bride, Sweet Scabious, or Old Maid's Pin-cushion, much improved in size and form. The plants grow two to four feet high and bloom continuously from July until late fall.

No. 130. Tall. Mixed colors. Pkt., 5c

No. 143. Dwarf. Double. Mixed colors. Pkt., 5c

Schizanthus

(Butterfly Flower. Fringe Flower)

One of the airiest and daintiest flowers imaginable. A hardy annual growing about eighteen inches high; excellent for borders and a charming house plant for winter blooming.

No. 80. Mixed colors. Pkt., 5c; oz., 20c

STOCKS

Stocks are among the most popular half-hardy plants for bedding, edging, pot culture and cut flowers. For brilliancy, diversity of colors, fragrance, profusion and duration of bloom, they are unsurpassed. The Ten Weeks and Dresden Stocks are annuals, and from seed started indoors in March or April blooms will be had in July. The Emperor and Brompton Stocks are biennials, but will bloom late the first year from seed, and are treated as annuals.

No. 170. Emperor Stocks. A very fine, double, late flowering biennial. Mixed colors. Pkt., 10c

No. 932. Dresden Stocks. Annuals. Plants are branching and bloom early and continuously. Pkt., 10c

No. 84. Large-flowering Dwarf Ten Weeks Stocks. Dwarf plants and very large flowers. Pkt., 10c

No. 377. Large-flowering Tall Wallflower Leaved Ten Weeks Stocks. Annuals. The plants are about eighteen inches tall and bear a profusion of immense flowers. Pkt., 10c

No. 85. Brompton, or Winter Stocks. These are biennials, but will bloom late the first season from seed. Mixed colors. Pkt., 10c

Lilly's

SUPERB
SPENCER

SWEET PEAS

A Splendid Assortment of the Most Magnificent Varieties

SWEET PEAS are the most universally popular annuals, and deservedly so, for they are of the easiest culture, bloom profusely and continuously during nearly the entire summer, and the beauty and fragrance of the superb flowers is incomparable. They are unequaled as cut flowers, keeping in perfect condition for more than a week. The climate of the Pacific Coast is especially adapted to the most perfect development of Sweet Peas. In no other locality do they grow to such immense size, superb form and beautiful shades and tints.

Good Sweet Peas can be grown with little care and under ordinary garden conditions, but a little extra attention will be liberally repaid in finer blooms and a longer season. On the Pacific Coast the best and earliest blooms are produced by planting the seed in the fall. A good article on Sweet Pea culture is contained in The Crop Book.

The Spencer Orchid-Flowered Sweet Peas

This is the most highly improved type of Sweet Peas. The plants grow six to ten feet high, the stems are a foot or more in length and each stem bears three or four of the most magnificent flowers. Many of the flowers are two and one-half inches across, and are beautifully formed, daintily waved and fluted.

Mrs. Routzahn

A beautiful blending of straw-ocolor tinted with blush-pink and shading to apricot and rose at the edges. One of the finest Spencers.

No. 1011-----Pkt., 10c; oz., 30c

Margaret Madison

A charming, clear, azure-blue, self colored. An improved strain, large flowered, and one of the most beautiful.

No. 1048-----Pkt., 10c; oz., 40c

Margaret Atlee

One of the most magnificent Spencer Sweet Peas. Of immense size, with large wavy wings, well poised, and few stems bear less than four blossoms. The color is very attractive, a rosy salmon-pink on a creamy buff ground.

No. 1043-----Pkt., 10c; oz., 50c

Countess Spencer

The original of the Spencer Type Sweet Peas, and still one of the best. Beautiful clear pink.

No. 949-----Pkt., 10c; oz., 30c

King White

The King of all white Sweet Peas because of the perfection of the flower in every detail—form, size, waviness, and glistening, immaculate whiteness.

No. 1041. -----Pkt., 10c; oz., 50c

Dobbie's Cream

A delicate cream-color. The best Spencer of this color.

No. 1042. -----Pkt., 10c; oz., 30c

Primrose Spencer

The best of its class. Clear primrose of best Spencer form. The flowers are large and beautifully waved.

No. 1002. -----Pkt., 10c; oz., 30c

Vermillion Brilliant

A brilliant scarlet Spencer of splendid form. The standard is very bold and beautifully waved. On account of its brightness this is a very telling color and should be in every collection.

No. 1046. -----Pkt., 10c; oz., 40c

Florence Morse

Very large wavy flowers of soft blush-pink flushed towards the edge with deeper pink.

No. 1014. -----Pkt., 10c; oz., 30c

Thomas Stevenson

Large and brilliant effective flowers of fiery red-orange. Practically sunproof. A grand Spencer.

No. 1044. -----Pkt., 10c; oz., 40c

Helen Lewis

A very large and fine Spencer Sweet Pea with orange colored standard and orange-salmon wings.

No. 953. -----Pkt., 10c; oz., 30c

King Edward Spencer

The best pure red Spencer. It is very large, with open form, immense wings and beautifully waved. The color is rich, crimson-scarlet.

No. 1009. -----Pkt., 10c; oz., 30c

Illuminator

A glorious orange-salmon Spencer Sweet Pea of striking color and magnificent form and size.

No. 1045. -----Pkt., 10c; oz., 50c

Wedgewood

A clear light silvery-blue with just a suggestion of mauve in the banner. An improved large flowering strain and the best variety of its color.

No. 1049. -----Pkt., 10c; oz., 40c

George Herbert Spencer

A large and beautiful Spencer Sweet Pea. The color is rose-crimson suffused with magenta and showing veins in the wings.

No. 1003. -----Pkt., 10c; oz., 30c

White Spencer

The flowers are very large, white, and of magnificent Spencer waved form. The stems are long and generally carry four blossoms.

No. 1001. -----Pkt., 10c; oz., 30c

LILLY'S

CROP BOOK

Free with any order, if requested.

LILLY'S

FERTILIZERS

Make More and Better Blooms

Asta Ohn

The best lavender Spencer Sweet Pea. The flowers are very large and beautifully waved. The color is a beautiful soft pinkish-lavender.

No. 1005. -----Pkt., 10c; oz., 30c

Othello Spencer

Of immense size, with large drooping wings. The color is a very dark, rich maroon. The best very dark colored Sweet Pea.

No. 1047. _____ Pkt., 10c; oz., 30c

Flora Norton Spencer

Flowers of medium size but very nicely waved and produced profusely. The color is a beautiful pale blue.

No. 1006. _____ Pkt., 10c; oz., 30c

Apple Blossom Spencer

A very large, bold flower of best Spencer form. The standard is very, very bright rose; wings primrose with flush of rose tint. Very robust and profuse flowering.

No. 1050. _____ Pkt., 10c; oz., 30c

LILLY'S Mixed Spencer Sweet Peas**A Superb Mixture of Best Varieties of Giant Waved Spencer Sweet Peas**

This splendid mixture contains nearly all good varieties of the Spencer type, and is designed for the convenience of those who wish all the colors, shades and tints, but do not care to keep them separate or to go to the expense of purchasing each of the many varieties.

No. 1007. LILLY'S MIXED SPENCER SWEET PEAS. Pkt., 10c; oz., 25c; $\frac{1}{4}$ lb., 75c; lb., \$2.50

Dainty Spencer

Very large, splendidly formed flowers of bluish-white distinctly picotee edged with rose-pink. A beautiful Sweet Pea of splendid Spencer form.

No. 1003. _____ Pkt., 10c; oz., 30c

Senator Spencer

A very large and attractive Spencer; chocolate and seal-brown striped, flaked and mottled on ivory-white. Very distinct and novel, and one of the very largest in size.

No. 1051. _____ Pkt., 10c; oz., 30c

America Spencer

Striped and flaked brilliant carmine-red over white. Very large flowers of splendid form and striking color.

No. 1024. _____ Pkt., 10c; oz., 30c

Grandiflora Type Sweet Peas**A Few of the Best Varieties and Colors**

Although the Standard Grandiflora type includes some splendid varieties and beautiful colors, the overshadowing size and beauty of the Giant Waved Spencer Sweet Peas has reduced the demand for the Grandifloras, so that we now list only one or two varieties of each of the good colors.

No. 364. America

Crimson-scarlet striped on white. Large, open form. Very attractive.

No. 365. Black Knight

The popular open form; large. Glossy, deep maroon; one of the darkest colored Sweet Peas.

No. 964. Blanche Ferry

Standard bright carmine-rose, wings white tinged with pink; open form.

No. 969. Dorothy Eckford

Large and pure white; semi-hooded form. The best white Sweet Pea of the Grandiflora type.

No. 976. Hon. Mrs. E. Kenyon

Light primrose; large; semi-hooded form; late.

No. 1039. Lord Nelson

Dark navy blue. The best dark blue Grandiflora.

No. 1040. Prima Donna

Exquisite, clear, light pink. Hooded form.

No. 954. King Edward VII

Large; open form; bright red. Best of the pure red Grandifloras.

No. 465. Lady Grisel Hamilton

Soft lavender tinted with mauve in the standard. Hooded form.

Prices: Any of the Grandiflora Type Sweet Peas _____ Pkt., 5c; oz., 15c; $\frac{1}{4}$ lb., 40c; lb., \$1.25

LILLY'S Royal Mixed Sweet Peas**A Fine Mixture of Standard Hardy Varieties Producing Abundantly**

Included in this mixture are the best of all varieties and colors of the Grandiflora Type Sweet Peas. Every seed is of some worthy variety and will produce a satisfactory blossom. Those who do not care to keep the colors separate will find this mixture very pleasing.

No. 958. LILLY'S ROYAL MIXED SWEET PEAS _____ Pkt., 5c; oz., 15c; $\frac{1}{4}$ lb., 30c; lb., \$1.00

The Crop Book contains cultural directions for Sweet Peas.

Silene

(Catch Fly)

An effective hardy annual growing about one foot high and bearing during the summer small white, pink and red flowers. Useful for bedding.

No. 82. Mixed colors.....Pkt., 5c; oz., 15c

Smilax

A tender climbing perennial with beautiful, bright green, glossy leaves. Much esteemed for conservatories on account of the splendid foliage.

No. 374. Smilax.....Pkt., 10c

Sunflower

(Helianthus)

These hardy annuals are splendid for backgrounds, or even for bedding, and must not be confused with the common Sunflower bearing one immense single flower. These grow four to six feet tall, branching, and bearing a multitude of small, artistic flowers.

No. 926. **Lilly's Miniature Sunflower.** (Helianthus Cucumerifolius). A magnificent variety growing about four feet high and bearing small, yellow daisy-like flowers with black centers. Makes an artistic background and is good for cutting.....Pkt., 10c; oz. 25c

No. 128. **Dwarf Double Sunflower.** (Helianthus nanus fl. pleno). A very double dwarf variety, altogether different from the ordinary single varieties, and much more beautiful. The plants grow about four feet tall.....Pkt., 5c; oz., 20c

Sweet William

(Dianthus Barbatus)

An old-fashioned plant producing clusters of gorgeously colored flowers of great fragrance. It is a hardy perennial, but blooms the first year from seed. It grows about one foot high and is good for beds and borders.

No. 26. Single, Mixed.....Pkt., 5c; oz., 20c

No. 27. Double, Mixed.....Pkt., 5c; oz., 75c

Thunbergia

(Black Eyed Susan)

Beautiful, rapid-growing, half-hardy annual climbers, preferring a warm, sunny situation; used for hanging baskets, window gardens, covering low fences, etc. Grows about four feet high and bears very pretty flowers in buff, white, orange, etc., with dark centers. No. 147. Mixed colors.....Pkt., 5c

VERBENAS

Verbenas are low-growing, creeping, half-hardy perennials, blooming the first year from seed and generally treated as annuals. They are splendid for beds, borders, rockeries, hanging baskets, window boxes and for cut flowers. The plants are vigorous, bloom freely, and produce large trusses of flowers ranging in color from white through the shades of lilac and rose to purple.

No. 88. Giant Hybrid Verbenas.....Pkt., 10c

Violets

These little favorites are deliciously fragrant and are unexcelled for borders and for cutting. They are perennials, quite hardy, but the plants are rather difficult to grow from seed.

No. 319. Large Single Violet, Mixed...Pkt., 10c

Wallflower

An old European favorite deserving of more appreciation than is shown it in America. It is especially adapted to the Pacific Coast, where it is entirely hardy, although it must be protected during the winter in colder climates. They are perennials, grow about eighteen inches high, are bushy, and very early in spring bear long spikes of deliciously fragrant flowers in bright colors.

No. 98. Double German Wallflower...Pkt., 10c

No. 99. Single Wallflower.....Pkt., 5c

WILD FLOWER GARDEN

There are few things more pleasing than a wild-flower garden hidden away in some secluded spot or among shrubbery. This mixture is ideal for the purpose, being composed of such hardy annuals as will require little care beyond scattering the seed, and producing a great profusion and variety of pretty flowers.

No. 438.....Pkt., 5c; oz. 30c

ZINNIAS

This old favorite half-hardy annual has been greatly improved and produces a profusion of large, double flowers; excellent for bedding and for bouquets. The plants form handsome, compact bushes two feet high, covered with flowers of a great variety of colors and shades. They commence blooming early in summer and continue until killed by frost

No. 933. **Giant Mixed Zinnia.** A choice mixture including the best and largest types, producing plants of handsome, compact form, and immense, perfectly formed, double flowers in brilliant mixed colors.....Pkt., 5c; oz., \$1.00

No. 100. **Mixed Zinnia.** A splendid mixture of good varieties and colors.....Pkt., 5c; oz., 40c

LILLY'S

TWO YEAR OLD
FIELD GROWN ROSES

Mature Two Year Old Plants of Splendid Quality

OUR STOCK OF ROSES includes only such varieties as are most desirable and suited to this locality. They are large, sturdy, field grown plants, two years old or more, and are much superior to the rooted cuttings or pot-grown plants commonly furnished.

These plants are guaranteed to be in perfect condition when shipped, and to reach destination in good condition when shipped by express, but not when shipped by parcel post or freight. When shipped by express, if not satisfactory when received, they should be returned to us at once, in which case we will replace them or refund purchase price.

We cannot guarantee plants to grow, for we have no control over the planting and care after delivery to purchaser.

Prices shown do not include transportation charges. We recommend that plants be shipped by express; charges to be paid at destination. If plants are to be shipped by parcel post, add sufficient to pay postage. When packed for shipment, plants weigh about two pounds each or ten pounds per dozen.

We do not ship any plants before November 1st or after April 1st.

Cultural directions for roses are contained in The Crop Book, which we will furnish free with any order if requested.

Sunburst

A magnificent yellow Hybrid Tea Rose with long, pointed buds carried singly on good stems. The flowers are very large, vigorous and healthy. The color is yellow, shaded orange-copper.

Price, 50c each; \$5.00 doz.

Rose Queen

The color is much the same shade of pink as Madame Caroline Testout, with yellow at base of petals. The buds are very beautifully formed, intensely colored, and borne on long stems. Hybrid Tea.

Price, 50c each; \$5.00 doz.

Lady Hillingdon

A very striking and lovely new Tea Rose. The plant is luxuriant, with beautiful narrow foliage, and very productive. The buds are long, slender and pointed. The color is a beautiful deep apricot and chrome yellow. The flowers are of good substance, lasting, and excellent for cutting.

Price, 50c each; \$5.00 doz.

Dr. Van Fleet

A splendid new Hybrid Climber; a cross between Souvenir du Pres. Carnot and Rosa Wichuraiana. The open flower is very large, with center built high, and petals beautifully undulated and cupped. The color is a remarkably delicate shade of flesh pink on the outer surface, deepening to rosy flesh in the center. The flowers are full and double, of delicate perfume; the buds are pointed and the stems are long. The foliage is a peculiar shade of bronze green, large and glossy. The plant is vigorous and practically immune from mildew.

Price, 50c each; \$5.00 per doz.

LILLY'S

Tobacco Extract for Aphis

Frau Karl Druschki

The very highest type of its class, and the best snow-white rose that has ever been introduced. The plants are strong, branching freely, and with luxuriant foliage. The flowers are glorious, of immense size, very double, of the purest white when fully opened, and are produced in great profusion on long, stiff, stems. Hybrid Perpetual.

Price, 35c each; \$3.00 dozen.

Lyon

One of the most popular new Hybrid Tea Roses. It is magnificently formed and beautifully colored; shrimp pink at edge of petals, center coral red shaded with chrome yellow.

Price, 40c each; \$4.00 dozen.

Richmond

The most satisfactory red rose. The plant is sturdy and free flowering; the buds are beautifully formed; the flowers are of good size, not very full; and the color is magnificent, a gorgeous scarlet crimson, vivid and rich. Does not fade. Hybrid Tea.

Price, 35c each; \$3.00 dozen.

Prince de Bulgaire

A splendid Hybrid Tea Rose, and constant bloomer. The plant is vigorous, with splendid foliage; the buds and flowers are large, full, of beautiful form, and the color is a delicate pink shading to salmon and yellow.

Price, 35c each; \$3.00 dozen.

Madame Caroline Testout

The most popular and most satisfactory rose grown in the Northwest. The plant is hardly, robust and free from disease. The foliage is very large and dark green. The flowers are borne in great profusion, for a long season, on long, stiff stems. Both buds and blooms are large, distinct and pretty in form, with a brilliant satiny pink color and a delicious fragrance. Hybrid Tea.

Price, 35c each; \$3.00 dozen.

Dean Hole

A beautiful Hybrid Tea Rose. The plant is vigorous and a continuous bloomer; the flowers are very large, full and of fine form; and the color is silvery carmine shaded salmon. Price, 35c each; \$3.00 dozen.

Winnie Davis

One of the prettiest of the Hybrid Tea Roses. The plant is strong, upright, healthy and a profuse bloomer. The flowers are of good size, and the buds are extremely pretty and well formed. The color is a pretty apricot pink..... Price, 35c ea.; \$3.00 doz.

Ulrich Brunner

A magnificent Hybrid Perpetual Rose, similar to American Beauty, but much superior for outdoor culture. Perfectly formed bright cherry-red flowers are raised high above the foliage on long, strong stems. One of the very best red roses.

Price, 35c each; \$3.00 dozen.

Hugh Dickson

Another good red rose. The plants are robust and free from mildew; the blooms are large, full and of good form, richly fragrant and of a pleasing bright, clear red color. Hybrid Perpetual.

Price, 35c each; \$3.00 dozen.

FRAU KARL DRUSCHKI

LILLY'S

Killarney

This splendid Irish Rose is considered by many to be the most beautiful of its class and color. The flowers are large, semi-double, of beautiful form, and the color is shell pink of the most exquisite shade. Hybrid Tea.

Price, 35c each; \$3.00 dozen.

White Killarney

A sport from The Pink Killarney, to which it is identical except in color, which is pure white except that in some soils and climates the edges of petals are tinged with pink. Hybrid Tea.

Price, 35c each; \$3.00 dozen.

Miss Kate Moulton

A Hybrid Tea Rose of entrancing beauty. The flower is superb; large, full and perfectly formed. The color is beautiful silvery pink.

Price, 35c each; \$3.00 dozen.

General McArthur

A splendid bright crimson-scarlet rose of good size and shape. The plant is vigorous, healthy and very productive. Hybrid Tea.

Price, 35c each; \$3.00 dozen.

We do not ship plants before November 1st or after April 1st.

Silver Moon

A magnificent white climber; a cross between Wichuraiana and Cherokee. The plant is a wonderfully strong grower, with large, glossy bronze-green foliage, practically immune to mildew.

The flowers are very large, clear silver white, with bright yellow stamens, delicately fragrant, and are borne on long stems in the greatest profusion.

Price, 35c each; \$3.00 dozen.

LILLY'S
TOBACCO
EXTRACT
For Aphids

LILLY'S
CROP BOOK
furnished free
with any order
if requested

Madame Abel Chatenay

A good, hardy, free-blooming, Hybrid Tea Rose. The buds are exquisite; the flowers of good size and beautiful shape; and the color is a beautiful creamy rose shaded with vermillion and salmon.

Price, 35c each; \$3.00 dozen.

Mrs. John Laing

Soft pink, large and of fine form; exceedingly fragrant, and produced abundantly on long, strong stems. Hybrid Perpetual.

Price, 35c each; \$3.00 dozen.

My Maryland

A popular Hybrid Tea Rose of robust growth and a prolific bloomer. The flowers are large and full, produced on good stems, and are an intense, glowing pink.

Price, 35c ea.; \$3.00 doz.

Belle Siebrecht

The buds are long and pointed, with gracefully reflexed petals; flowers beautifully formed and sweetly perfumed; and the color is a rich solid pink. Hybrid Tea.

Price, 35c ea.; \$3.00 doz.

Bessie Brown

Very pleasing in form and color. The flowers are very large, extremely full and double, and the color is white tinged with flesh. Hybrid Tea.

Price, 35c each; \$3.00 dozen.

William Allen Richardson

A very pretty climbing rose. The flowers are of good size, and the color is copper yellow flushed with carmine. Noisette.

Price, 35c ea.; \$3.00 doz.

Gruss an Teplitz

For intense and dazzling color, there is no other to compare with this splendid Hybrid Tea Rose. The flowers are produced in profusion during the entire growing season, are of good size and form, and the color is a rich fiery red shaded with dark velvety sheen.

Price, 35c ea.; \$3.00 doz.

General Jacqueminot

The "Jack Rose" has long been the most popular hardy crimson rose, and is still one of the best of that color. The plant is strong and vigorous, and a profuse bloomer. The flowers are bright, shining crimson, rich and velvety. Hybrid Perpetual.

Price, 35c each; \$3.00 dozen.

Kaiserin Augusta Victoria

This grand white rose is unsurpassed in beauty. The flowers are beautifully formed, with gracefully reflexed outer petals. The beautiful, long, pointed buds are attractively tinted with yellow or green, but the full-blown roses are a delicate, waxy, almost pure white. Hybrid Tea.

Price, 35c each; \$3.00 dozen.

Marechal Neil

A splendid yellow climber. The flowers are large, globular, very full, highly scented, and the color is a beautiful, deep, rich yellow. Noisette.

Price, 35c each; \$3.00 dozen.

Papa Gontier

A strong, vigorous plant and constant bloomer. The buds are very large and the flowers magnificent. The color is a vivid cherry-red, shaded yellow, with reverse of petals crimson. Tea.

Price, 35c each; \$3.00 dozen.

If plants are to be shipped by parcel post, remittance must include sufficient to pay postage.

La France

This has long been one of the most popular roses, and still has few equals. The buds and flowers are of lovely form, and the color is a beautiful shade of pink tinged with crimson. Hybrid Tea.
Price, 35c ea.; \$3.00 doz.

Madame Alfred Carriere

One of the best white climbers. The flowers are of good size, double, highly fragrant, and the color is a rich creamy white faintly tinged with blush and pale yellow. Hybrid Noisette.
Price, 35c ea.; \$3.00 doz.

Dorothy

Perkins

A beautiful pink rambler, similar to Crimson Rambler except in color and it is not so liable to mildew. Flowers in large clusters, very double, and the color is a pretty, bright, shell pink. Polyanthus.
25c ea.; \$2.50 doz.

Crimson

Rambler

A strong and rapid climber, producing a great profusion of small crimson flowers in large pyramidal panicles. Polyanthus.
25c ea.; \$2.50 doz.

Thousand

Beauties

[Tausendschon]

A beautiful new climber, and by far the best of the ramblers. The plant makes a wonderful growth, is literally covered with blooms for a long season, and the coloring is beautiful, showing a great variety of shades of pink. The flowers are large and are produced in trusses of ten to fifteen blooms. The foliage is good. Polyantha.
35c ea.; \$3.00 doz.

Climbing

Caroline Testout

A sport from the popular Madame Caroline Testout, producing the same beautiful clear pink flowers. A vigorous climber. Price, 35c each; \$3.00 dozen.

LILLY'S CROP BOOK
Contains Cultural Directions for Roses

ENCYCLOPEDIA OF PRACTICAL HORTICULTURE

Published in the Northwest for Northwestern Conditions

JUST WHAT YOU NEED.
An encyclopedia covering the whole subject of horticulture, and applying to this particular section.

The only complete manual of fruit and vegetable growing, and the only work of the kind applying particularly to conditions in the Northwest. The most complete treatment of diseases and pests ever compiled.

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It is in use in over three hundred and fifty schools in Washington, and in Experiment Stations all over the United States. The work is scientific, but practical and written in language that all will understand. It is splendidly illustrated and printed on fine paper, and handsomely bound in four volumes; 2,064 pages; 4,500 subjects, fully indexed.

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LILLY'S VEGETABLE PLANTS AND ROOTS

Tomato Plants

Good, sturdy, well rooted plants. We can furnish Puget Sound Special and Earliana plants only, as they are best adapted to the Northwest.

Season May 1st to June 30th.

Transplanted: Dozen, 25c; 100, \$1.00.

Not transplanted: Dozen, 20c; 100, 75c.

Write for prices on large quantities.

Celery Plants

The early self-blanching varieties, Vilmorin's Paris Golden Yellow, Silver Plume, White Plume, and Golden Self Blanching.

Season May 1st to July 31st.

Dozen, 20c; 100, 50c; 1,000, \$3.50.

Write for prices on large quantities.

Rhubarb Roots

Strong, field-grown roots, grown from seed. Lin-neaus and Mammoth Victoria.

	Each	Doz.	100
One year old:	\$0.10	\$0.50	\$3.00
Two years old:	.15	1.00	6.00

Season Nov. 1st to May 15th.

Horseradish Roots

Season Nov. 1st to May 15th.

Price: 25c per dozen; \$1.50 per 100.

Cabbage Plants

Strong, healthy plants of the following varieties: Early Jersey Wakefield, Lilly's Glory, Copenhagen Market, All Seasons, Danish Ballhead and Premium Late Flat Dutch. Season March 1st to June 30th.

Dozen, 20c; 100, 50c; 1,000, \$3.50.

Write for prices on large quantities.

Cauliflower Plants

We can furnish Early Alba and Snowball Cauliflower plants only, as we consider them best for either market garden or home use.

Season April 1st to June 30th.

Dozen, 20c; 100, \$1.00; 1,000, \$7.50.

Write for prices on large quantities.

Asparagus Roots

Fine, hardy, field-grown roots of Columbia Mammoth and White Colossal. Season Nov. 1st to May 15th.

	Doz.	100	1,000
One year old:	\$0.20	\$0.75	\$ 6.00
Two years old:	.25	1.50	10.00

Chives, or Schnittlauch

Large clumps; may be divided. Season Nov. 1st to May 15th.

Price: 10c per clump; \$1.00 per doz. clumps.

Prices do not include postage. If to be shipped by parcel post, postage will be additional.

BURBANK'S PHENOMENAL BERRY

ONE of Luther Burbank's greatest triumphs; the result of a cross between the California Dewberry and the Cuthbert Raspberry. It is different from any other berry except the Loganberry, which it closely resembles, but is larger, sweeter, has a smaller core, will make twice the amount of jelly, and the canes are stronger, more vigorous, and more productive. A half-dozen plants will produce all of this delicious fruit that an ordinary family can use.

20c each; \$2.00 dozen; \$12.50 per 100.

Loganberry

A cross between the blackberry and raspberry, superior to either in size and flavor, and entirely different from any other berry except the Phenomenal.

15c each; \$1.50 dozen; \$10.00 per 100.

BLACKBERRIES

HIMALAYA GIANT

A remarkable berry, producing immense crops of exceedingly large, sweet, juicy berries, with a delicious aromatic flavor. The plant is a rampant grower, single canes often making a growth of fifty feet in one season. The berries are produced in immense clusters, beginning to ripen in July and continuing until winter. The original plants were brought from the Himalaya Mountains, where they have been grown for many centuries, and the severe climate has made them unusually hardy, enabling them to withstand extremes of cold, heat and drought.

Prices, 15c each; \$1.50 per dozen; \$10.00 per 100.

NEW MAMMOTH

The Mammoth Blackberry is in a class by itself, and no other blackberry can be compared with it in size or flavor, berries two and one-half inches long being not uncommon. The fruit ripens three weeks earlier than the Evergreen.

Lucretia Dewberry

A trailing blackberry, the finest of its class. It bears profusely, fine, large, glossy black berries; rich, sweet and luscious.

GRAPES

Concord

The most popular black grape; flavor sweet and pleasant; bunches compact; very hardy.

Muscadine

The old reliable white grape; one of the most prolific and finest for home use.

Prices, 15c each; \$1.50 per dozen; \$10.00 per 100.

Delaware

A most desirable garden variety; berries small, violet red, very sweet and highly flavored.

Salem

A splendid coppery-red grape of good flavor and quality; quite hardy.

IMPROVED SUPERLATIVE RED RASPBERRY

THIS SPLENDID new raspberry was introduced by us in 1907, and has proved to be the very best red raspberry in cultivation. The berry is of immense size, very firm, with small, brittle seeds, a rich, soft crimson color, and a delicious aromatic flavor, less acid than others.

15c each; \$1.50 per dozen; \$10.00 per 100.

Cuthbert Red Raspberry

A popular standard variety for market and home use. Produces an abundance of large, rich, deep crimson berries. Stands heat and sun well, and is a good shipper.

15c each; 75c per dozen; \$5.00 per 100.

PLUM FARMER BLACK RASPBERRY

A new variety, and the best black raspberry ever introduced. The plants are hardy, vigorous, and very productive. The berries are extra large, exceedingly early; thick meat and of exquisite flavor.

20c each; \$1.50 per dozen; \$10.00 per 100.

PERFECTION CURRANT

This splendid new variety is the highest development in currants. The berries are a beautiful bright red, and both berries and bunches are very large. They are borne in great abundance, and are rich, mild, sub-acid, with plenty of pulp and few seeds; of better quality and flavor than any other currant.

Price, 20c each; \$2.00 per dozen; \$14.00 per 100.

Red Cherry Currant

One of the very best varieties. A strong grower and good yielder of large red berries.

Black Victoria Currant

Similar to Victoria, except that it is larger, sweeter and almost jet black when ripe.

Price, 15c each; \$1.50 per dozen; \$8.00 per 100.

Victoria Currant

Medium sized, bright red fruit in long bunches; excellent quality; late.

White Grape Currant

The best white variety. Large; yellowish white. Very hardy and productive.

GOOSEBERRIES

Downing

A large, handsome berry of pale green color and excellent quality. A great favorite for home and market. The bush is vigorous, and free from mildew.

Oregon Champion

Very popular. Berries very large; pale green; very sweet; bush strong and prolific.

Price, 15c each; \$1.50 per dozen; \$8.00 per 100.

Industry

Of English origin. Bears immense crops of large red berries. Very successful in this country.

Smith's Improved

Fruit large, pale green, thin skinned and sweet; a prolific yielder, and excellent for market or home use.

Prices do not include transportation charges. If shipped by parcel post, postage will be additional.

LILLY'S SEED POTATOES

Grown for Seed, from Thoroughbred Stock, Under Our Direct Supervision

THAT LIKE BREEDS LIKE is especially true of potatoes, and those who plant inferior potatoes, or deteriorated or mixed varieties year after year are bound to produce very inferior crops. Seed potatoes should not only be thoroughbred and true to type, but should also be of the size and shape which it is desired to reproduce, and they should be from hills which have produced an abundance of that type and size. The same farmer who plants inferior potatoes would not think of breeding scrub cattle or hogs; yet one is just as important as the other.

It is also important that the seed stock should be changed occasionally, for potatoes grown in the same locality for several years will deteriorate, even though the greatest care is exercised in selecting the seed.

We have purchased thoroughbred seed stock from the best potato fanciers, and from this stock we have grown in Washington, five carloads of splendid seed potatoes; especially grown for seed. Every potato is true to name, and its ancestors have been bred for both type and productiveness.

Before choosing the varieties which we have grown, we tested a great many of the most promising varieties in our trial gardens and selected the seven varieties that proved to be best for this locality. Some of these are old varieties, but the stock has been rejuvenated by careful selection.

As our stock of these varieties is limited, we would suggest that you order early, also that you name a second choice to substitute in case we are sold out.

Irish Cobbler

We believe that this is unquestionably the best early potato. It is extra early and best for early market. The tubers are very handsome, almost round, larger than other early potatoes, and uniform in shape and size, producing fewer small potatoes than any other early variety. The skin is creamy white, sometimes slightly netted, which is an indication of good quality. The eyes are strong, well developed and slightly indented. The flesh is white and of excellent quality and fine flavor, cooking dry and mealy. It is a very reliable variety and a heavy cropper.

Price, 10 lbs. or more, 5c per lb.; 50 lbs. or more, 4c per lb.; sack lots, \$3.00 per 100 lbs.

Bovee

A splendid early potato, earlier than Early Rose and much more productive. It yields a very large percentage of perfectly formed tubers of good size. The cultivator can be used to better advantage on a crop of Bovee than any other sort owing to the short and compact growth of the vines and its habit of setting the entire crop close to the hill. Bovee, perhaps more than any other sort, delights in a rich soil and thorough cultivation, and under proper conditions will yield abundantly, but under adverse conditions will not produce the best results. The skin is pink or flesh color and the flesh is white and of good quality.

Price, 10 lbs. or more, 5c per lb.; 50 lbs. or more, 4c per lb.; sack lots, \$3.00 per 100 lbs.

Prices shown in this catalog do not include transportation charges except in the few cases where so specified.

Quick Lunch or Noroton Beauty

A new extra early potato which our trials have proved to be highly satisfactory, being a splendid, large potato yielding as much as the medium early varieties. It is one of the very earliest varieties, is a sure cropper and is uniform in size. The tubers are globular in form, and have a peculiar pink marking which give them a handsome appearance. The plants are vigorous and when mature die down quickly and completely. Not subject to disease. The quality is excellent, it keeps as well as the late varieties, and is well adapted for market gardener's use on early land.

Price, 10 lbs., 5c per lb.; 50 lbs., 4c per lb.; sack lots, \$3.00 per 100 lbs.

Up To Date

This is a new potato, introduced from England, and as far as we know has never been handled by any seedsman in this country. Our trials have made a very favorable impression, and we believe that it will prove to be a valuable main crop variety.

It is medium to late, and a heavy yielder. In shape it is slightly oblong and flattened. The skin is white and the eyes are very shallow, hardly indented at all.

We have saved most of the crop for planting stock, but have a small quantity to dispose of at the following prices as long as it lasts.

Price, 10 lbs., 7c per lb.; 50 lbs., 6c per lb.; sack lots, \$5.00 per 100 lbs.

Except when otherwise specified, prices shown in this catalog are for goods F. O. B. Seattle or Portland, and do not include transportation charges. If goods are to be shipped by parcel post, or by express or freight to a station at which there is no agent, remittance must include sufficient to pay transportation charges.

Other Varieties of Potatoes

We will probably be able to furnish other varieties such as Early Rose, Burbank, Gold Coin, Netted Gem, American Wonder, Beauty of Hebron, Early Puritan and such others as we can purchase from reliable growers. A list of varieties which we have in stock, and prices of same, will appear in season in supplements to this catalog, which we will be glad to mail on request.

LILLY'S FERTILIZERS
and
GOOD SEED
make
POTATO GROWING PROFITABLE

It costs very little more to grow a full crop than a half crop, and the profits are much greater

Early Ohio

This well known variety is a favorite with market gardeners, but the seed generally used is badly mixed. Our stock is pure and has produced a splendid crop. It matures a week earlier than Early Rose, and the quality is extra good considering its extreme earliness; it cooks mealy even before fully grown. It succeeds best in a rich, loamy soil; not recommended for light or sandy land. In form it is oblong, and the color is a dull red.

Price, 10 lbs., 5c per lb.; 50 lbs., 4c per lb.; sack lots, \$3.00 per 100 lbs.

Carman No. 3

One of the very best main crop potatoes. It is very reliable, is unexcelled as a heavy yielder, and produces very few small potatoes. The tubers are borne close to the plant, making them easy to harvest. It is a perfect keeper, and in quality is unsurpassed. The tubers are large, oblong and slightly flattened. The eyes are few and very shallow. The skin and flesh are white.

Price, 10 lbs., 5c per lb.; 50 lbs., 4c per lb.; sack lots, \$3.00 per 100 lbs.

Sir Walter Raleigh

A splendid new main crop potato, quite similar to Carman No. 3. The vines are vigorous and stand erect long enough to allow late cultivation. It produces an extremely large crop of round, slightly flattened tubers, smooth, white skinned and very attractive. Its remarkably good quality is greatly improved when stored in a cool, dry cellar. When cooked it breaks up thoroughly, presenting a flaky, snowy appearance, which added to its excellent flavor makes it very superior.

Price, 10 lbs., 5c per lb.; 50 lbs., 4c per lb.; sack lots, \$3.00 per 100 lbs.

Jerusalem Artichokes

These are quite distinct from the Green Globe Artichokes listed in the Vegetable Seeds section of this catalog. The tubers resemble potatoes, but, although by some they are considered a great delicacy, in this country they are used mostly for hog food. They are very easy to grow and are one of the best and cheapest foods for hogs; excellent for fattening when fed in conjunction with grain. They are also sometimes fed to cattle.

They should be planted and cultivated the same as potatoes, and will produce immense crops, but are very hardy and persistent, and will grow under almost any conditions. Plant Artichokes on new land, and when they are mature turn hogs into the field; the hogs will do the rest.

Price, 10 lbs., 5c per lb.; 50 lbs., 4c per lb.; sack lots, \$2.50 per 100 lbs.

LILLY'S NONPAREIL LAWN GRASS SEED

Forms a Tough and Enduring Turf, Always Green

This is a mixture of many suitable grasses; early, medium, late, short, tall, bunch, and those with creeping roots, scientifically selected to produce a lawn which will be green all the year, form a thick, matted turf which will actually be improved by tramping, with roots reaching far into the ground to withstand drought and prevent heaving in winter, and especially adapted to the climate and soils of the Pacific Coast.

This mixture contains some White Clover to make

Price: Quart package (about 1 lb.), 25c; 5 lbs. or more, 20c per lb. Postage additional.

LILLY'S

IMPORTED LAWN GRASS

For Extra Fancy Lawns

For those who wish an extra fancy lawn, we have prepared this mixture composed of the choicest imported lawn grass seeds, carefully selected as being adapted to conditions on the Pacific Coast, to produce a firm, velvety, rich green turf of uniform color, and which in our climate will remain green all the year.

As the grasses in this mixture are not so easily started as the more hardy grasses, we would recommend the Nonpareil Lawn Grass for those who do not care to give the lawn the extra care which an especially fine lawn requires.

Sold only in sealed packages. Price, 35c per quart package; \$1.50 per 4-lb. carton.

Lilly's Lawn Dressing is the best fertilizer for lawns, flower beds and shrubbery.

a quick showing and act as a nurse crop for the grasses. The grasses are more hardy and not so fine as those in the Imported Lawn Grass Mixture, but will produce a splendid lawn with less care, and is preferable where utility and endurance are more desired than the satisfaction of having the finest lawn that it is possible to obtain. One pound of seed is sufficient to seed about three hundred square feet of new lawn, or to renew about six hundred square feet of old lawn.

LILLY'S

SHADY LAWN MIXTURE

Grows Where Other Grasses Fail

The unsightly bare spots under trees and shrubbery may be overcome with this mixture. It is also suitable for entire lawns and parks where, on account of being more or less shaded, other mixtures do not thrive. Ground that is sour or mossy must first be sweetened with Ground Lime Rock or Lime, and fertilized, after which this mixture will produce a good turf in the shadiest spots.

Price: Quart package (about 1 lb.), 35c; 5 lbs. or more, 30c per lb. Postage additional.

Lawns, on account of being kept trimmed and not allowed to reseed themselves, need to be reseeded about every third year. One pound of either of these mixtures will be sufficient for three hundred square feet of new lawn, or twice that amount of old lawn.

LILLY'S GOLF LINKS MIXTURE

Forms an Indestructible Turf, Smooth, Firm, Elastic.

A turf, to be suitable for a golf course, must, in addition to making a good appearance and remaining green all the season, be smooth, firm, elastic, tough and capable of standing a great deal of abuse. To

meet these requirements, we have prepared a formula composing such foreign and domestic grasses as will make a short, fine growth with densely intermingling roots reaching deep into the ground.

Prices, Quart package (about 1 lb.), 35c; 5 lbs. or more, 35c per lb.; 100 lbs., \$30.00.

LILLY'S PUTTING GREEN MIXTURE

Not Injured by Constant Tramping

This mixture, in addition to forming a smooth, green, velvety lawn of the finest quality, forms a deep, closely interwoven root system that is not injured by constant tramping. It is equally good for forming new greens or rejuvenating old ones. For new greens, one pound of seed is sufficient for three hundred square feet, but heavier seeding will give better results.

Price, Quart package (about 1 lb.), 35c;
5 lbs. or more, 35c per lb.; 100 lbs., \$32.00.

LILLY'S MAKALAWN

Produces Remarkable Results

A combination of choice, selected lawn grass seeds and quick acting fertilizers held in a dormant state until combined with soil and water, when it springs into life almost immediately and produces a splendid lawn in an incredibly short time. It is equally good for establishing new lawns or renewing old lawns. Five pounds is sufficient for one thousand square feet of new lawn or two thousand square feet of old lawn.

Packed in 5-lb. packages only. Price, \$1.00 per package. Postage additional.

The splendid golf links of Seattle, Everett, Bellingham, Aberdeen and other cities in the Northwest are practical demonstrations of the excellence of Lilly's Grass Seed Mixtures. Our climate is ideal for producing perfect lawns, and there is no excuse for an unsightly lawn in the Pacific Northwest. The Crop Book tells how to make and maintain a lawn; free with any order if requested.

LILLY'S ALFALFA SEED

(Medicago Sativa)

99½ PER CENT PURE**Free from Dodder and other
Noxious Weed Seeds**

Lilly's Best Alfalfa Seed is the acme of perfection in seeds. It never tests less than 99½% pure, is free from dodder and other noxious weed seeds, and consists only of big, plump seeds, all small and shrunk seeds having been removed. Hand-picked seeds could hardly be better.

To maintain this high standard requires that the greatest care be exercised in growing and harvesting the seed. It is never grown in localities infested with dodder, and we have the most perfect seed cleaning machinery in use in the West.

We handle only one grade of Alfalfa Seed, the best that it is possible to produce, for the careful farmer does not care to sow weed seed on his land, and the difference in price between this and poor seed is insignificant compared with the results.

The Pure Seed Law requires 96% purity, but it is unsafe to sow the 4% of weed seed which the law allows. When purchasing seed, the price should be only a secondary consideration. At best, only a few cents per acre would be saved, and seed containing weed seed would be expensive at any price. None but the very best tested seed should be sown.

Alfalfa seed is usually sown at the rate of ten to twenty pounds per acre. A good article on growing Alfalfa appears in the Crop Book.

LILLY'S BEST ALFALFA: \$23.00 per 100 lbs.; less than sack lots, 25c per lb.

LILLY'S ALSIKE

(Trifolium Hybridum)

98 PER CENT PURE**A Clover for Cold, Wet Land**

Alsike will thrive on almost any kind of soil, but is especially useful on land that is too wet and cold for Red Clover. It makes a very good quality of hay, and may be sown with Timothy, as it matures at the same time. It is also good in pasture mixtures for wet land.

We have a second grade, better than is required by the pure seed law, at a less price, but the difference in price does not warrant the use of any but Lilly's Best. Eight to ten pounds of seed is sufficient for an acre.

LILLY'S BEST ALSIKE: \$21.00 per 100 lbs.; less than sack lots, 23c per lb.

Choice Alsike, \$20.00 per 100 lbs.; less than sack lots, 22c per lb.

If you have had trouble in getting a good stand of Alfalfa, Clover or other legumes, Farmogerm will solve the problem.

A SINGLE PLANT OF LILLY'S ALFALFA

TURKESTAN ALFALFA

(Medicago Turkestanica)

Dry Land Alfalfa

This variety comes from Central Asia, is very hardy, and is adapted to very dry and unirrigated land. In all other respects it is almost identical with Medicago Sativa.

The seed should be sown rather thickly, fifteen to twenty pounds per acre; otherwise the stalks are inclined to be coarse and hard.

Price, \$24.00 per 100 lbs.; less than sack lots, 25c per lb.

Esparcette or Sanfoin

(Onobrychis Sativa)

A perennial, leguminous fodder plant, thriving on light, dry, or sandy soils. Sow in spring, covering the seed quite deeply, at the rate of thirty to fifty pounds per acre.

Price, \$17.00 per 100 lbs.; less than sack lots, 18c per lb.

Prices shown in this catalog are subject to change. Current Price List will be mailed on request.

LILLY'S RED CLOVER SEED

(Trifolium Pratense)

99 PER CENT PURE

Recleaned and Tested. Free From Dodder.

Lilly's Best Red Clover Seed is one of our hobbies, and we have reason to be proud of it. It is guaranteed to test not less than 99% pure, and we make it as much better as possible, usually as high as 99½% pure. This state of purity is seldom equalled, and would be impossible without our splendid seed cleaning machinery. The Pure Seed Law requires only 92% purity, and that has been considered a high state of purity for Red Clover, as it is difficult to clean with ordinary seed cleaners.

Red Clover is nearly or quite as valuable as Alfalfa, and has the advantage of thriving where Alfalfa cannot be grown. Although it is an important crop in all parts of the country, it should be much more generally grown west of the Cascade Mountains, where Alfalfa is very uncertain. It is not only a very valuable hay, silage and forage crop, but it is also of inestimable value for fertilizing and improving the soil, either when plowed under or when removed from the field. In common with other legumes, it has the power of drawing nitrogen from the air and distributing it in the soil.

LILLY'S BEST RED CLOVER, \$22.00 per 100 lbs.; less than sack lots, 23c per lb.

Choice Red Clover, \$21.00 per 100 lbs.; less than sacklots, 22c per lb.

Mammoth Red Clover

(Trifolium Medium)

Mammoth Red Clover is very similar to the common Red Clover except that it grows very rank and the stalks are very coarse, making it of little use for hay or forage, and it is used almost exclusively to plow under for green manure.

Price, \$23.00 per 100 lbs.; less than sack lots, 25c per lb.

White Sweet Clover

(Bokhara Clover. Melilotus Alba.)

Sweet Clover makes a wonderful growth, sometimes five feet high, and seed sown in spring will produce a crop the following fall, and two or three crops the next year. It is a biennial, but will reseed itself if allowed to do so. In the past it was not considered very valuable, and was used only for bee pasture, early spring pasture for stock, and for plowing under; but it is now becoming quite popular for pasture, forage and hay.

Price, \$39.00 per 100 lbs.; less than sack lots, 40c per lb.

Yellow Sweet Clover

(Melilotus Indica)

This is similar to White Sweet Clover except that the blossoms are yellow and it is an annual. It is being used quite extensively for inoculating and improving soil for Alfalfa. It will grow on almost any soil, and one or more crops plowed under will greatly improve the soil and at the same time supply the nitrogen bacteria necessary for growing Alfalfa. Being an annual, it is not difficult to eradicate, provided it is not allowed to go to seed.

Price, \$18.00 per 100 lbs.; less than sack lots, 20c per lb.

LILLY'S WHITE COVER

(Trifolium Repens)

97 PER CENT PURE

Only the Very Best is Fit for Lawns

For lawns, especially, none but the very best White Clover seed obtainable should be sown, as ordinary seed is very liable to contain sorrel.

Lilly's Best White Clover Seed is grown on land free from noxious weeds, is thoroughly recleaned, and is as nearly perfect as it can be produced. No White Clover Seed testing less than 97% pure is ever branded Lilly's Best; it is very difficult to attain that high degree of purity, and when we are unable to do so, we supply Choice White Clover Seed only. The Choice White Clover is always better than is required by the pure seed law.

For lawns, sow at the rate of 25 lbs. or more per acre; for pasture, 8 to 10 lbs., mixed with grass seeds.

LILLY'S BEST WHITE CLOVER Write for price

Choice White Clover.....75c per lb.

Crimson Clover

(Trifolium Incarnatum)

Crimson Clover is an annual, useful principally as a cover crop or to plow under for green manure. It is a good crop in California, and may be grown in the Willamette Valley, but further north we do not recommend it. Sow 12 to 20 lbs. per acre.

Price, \$20.00 per 100 lbs.; less than sack lots, 22c per lb.

TIMOTHY AND CLOVER
5½ TONS TO THE ACRE

LILLY'S TIMOTHY SEED

(Phleum Pratense)

99½ PER CENT PURE

The Best and Purest Seed That Can Be Produced

Timothy Seed is another of our extra specials, and it would be very nearly impossible to produce better seed than Lilly's Best. The seed is grown in Idaho, on land that is free from weeds, and is harvested with the greatest care to prevent damage and discoloration. With our splendid seed cleaning equipment, all small and light seed, as well as all foreign matter, is removed. None that tests less than 99½% pure is branded Lilly's Best. That state of purity would be impossible with ordinary seed cleaners. The pure seed law requires that Timothy Seed shall test 96% pure, which is really a very high test.

Timothy is the standard grass for hay, and although there are probably other grasses equally good or better for home use, it is demanded by the markets, and brings the highest prices. The seed is sown at the rate of ten to twenty pounds per acre; heavy seeding produces a finer quality of hay. Our Choice Timothy Seed, although a second grade, is better than is required by the pure seed law. However, the difference in price does not justify the use of this seed when Lilly's Best can be had.

LILLY'S BEST TIMOTHY SEED, \$9.50 per 100 lbs.; less than sack lots, 10½c per lb.
Choice Timothy Seed, \$9.00 per 100 lbs.; less than sack lots, 10c per lb.

LILLY'S KENTUCKY BLUE GRASS

(Poa Pratensis)

Kentucky Blue Grass is a true perennial, lasting indefinitely and improving each year. Its densely creeping root-stocks, spreading habit, even growth, fine texture and rich green color renders it one of the finest grasses for lawns and pastures. It forms a close turf, starts very early in spring, and on the Pacific Coast remains green practically all the year.

Our seed is imported direct from one of the most reliable growers in Kentucky. It is free from Canadian Blue Grass and other foreign seeds, is carefully re-cleaned and is the best seed obtainable. For lawn, sow one pound to four hundred square feet.

Price, 25c per lb.; \$17.00 per 100 lbs.

Canadian Blue Grass

(Poa Compressa)

Canadian Blue Grass, although not so popular as Kentucky Blue Grass for lawns, is more hardy, easier to get started, makes a very tough turf and is of fine texture. It is also a splendid grass in pasture mixtures. Sow 1 lb. to 400 square feet for lawn, or 20 to 30 lbs. per acre for pasture, when used alone.

Price, \$14.00 per 100 lbs.; less than sack lots, 15c per lb.

Creeping Bent, or Florin

(Agrostis Stolonifera)

A splendid grass in lawn mixtures. Its creeping, rooting stems form a tough, compact turf that is improved by tramping. Equally good in pasture mixtures. For lawns, sow one pound to four hundred square feet when used alone.

Price, 40c per lb.; \$35.00 per 100 lbs.

Prices are subject to change. Current Price List will be mailed on request.

RED TOP*(Agrostis Vulgaris)*

Red Top, or Herd's Grass, is valuable in wet places where other grasses will not thrive. It is rather slow in starting, but when a good stand is secured it makes one of the best permanent pastures and a fair grade of hay. It is usually best mixed with other grasses, such as Timothy, White Clover and Alsike.

We have two grades of Red Top; Fancy and Choice. We recommend the Fancy Red Top, as it is solid seed, free from chaff, requires little more than half as much per acre, and easier to sow. Choice Red Top may be as pure, but as nearly half the weight is chaff, there is no economy in sowing it. When used alone, sow ten to fifteen pounds of solid seed, or twice that amount of seed in chaff, to the acre.

Fancy Red Top, \$30.00 per 100 lbs.; less than sack lots, 32c per lb.

Choice Red Top, \$19.00 per 100 lbs.; less than sack lots, 20c per lb.

Brome Grass*(Bromus Inermis)*

Brome Grass is valuable in the semi-arid regions where less hardy grasses cannot be grown. It has creeping rootstocks which quickly form a thick turf, and will stand a great deal of drought. It is not especially high in food value, and there are other grasses more valuable for the country west of the Cascade Mountains. It is most valuable as a pasture grass, but grows tall enough for hay. When used alone, sow 30 to 40 lbs. per acre.

Price, \$19.00 per 100 lbs.; less than sack lots, 20c per lb.

Crested Dog's Tail*(Cynosurus Cristatus)*

A perennial grass forming a smooth and lasting turf, excellent in mixtures for lawns, putting-greens and pastures. It thrives best on rich, moist land, but can accommodate itself to almost any soil, and, as the roots penetrate deeply into the ground, it can stand severe drought. Height one to two feet. Sow at the rate of 20 to 30 lbs. per acre when sown alone, or in that proportion when mixed with other seeds.

Price, \$22.00 per 100 lbs.; less than sack lots, 40c per lb.

Tall Meadow Oat Grass*(Avena Elatior)*

Valuable for pasture on account of its early and luxuriant growth; it also produces a heavy yield and good quality of hay, which is relished by all stock. It is deep rooting, hardy, withstands drought, and is grown successfully in Eastern Washington and California. It is best sown with other grasses, and should not exceed one-fifth of the total amount of seed sown.

Price, \$22.00 per 100 lbs.; less than sack lots, 25c per lb.

ORCHARD GRASS*(Dactylis Glomerata)*

Orchard Grass, or Cock's Foot, is one of our most useful grasses. It comes very early in spring, furnishing pastures earlier than other grasses. It makes good hay if cut as soon as in bloom; later it becomes hard and woody.

It is especially valuable, mixed with other grasses and clovers, for pastures and for sowing on logged off and burned over land. It is very hardy, and thrives in shady places where other grasses will not grow, but is not suitable for lawns. Being a bunch grass, it is best mixed with other grasses. Sow at the rate of 40 to 60 lbs. per acre when used alone.

Price, \$22.00 per 100 lbs.; less than sack lots, 25c per lb.

Reed Canary Grass*(Phalaris Arundinacea)*

Reed Canary Grass prefers stiff, wet land, will stand more flooding than any other grass, the rootstocks are very strong and creep extensively, and it will grow in shade. It is used mostly for binding the banks of streams, but makes a fair quality of hay if cut before flowering.

Price, \$22.00 per 100 lbs.; less than sack lots, 75c per lb.

Mesquite*(Holcus Lanatus)*

Mequite, also known as Velvet Grass and Meadow Soft Grass, is of little agricultural value, except for pastures on light, sandy or marshy soil, where other grasses will not grow. It has little food value, is not relished by stock, and on account of its spreading habit is rather difficult to eradicate.

Price, \$17.00 per 100 lbs.; less than sack lots, 20c per lb.

SUDAN GRASS*(Andropogon Sorghum)*

In a search for a forage plant without rootstocks, suitable for dry sections, the Department of Agriculture introduced Sudan Grass from Egypt. It is recommended as being a great drought resisting hay and forage crop, especially adapted to hot, dry sections, but will stand considerable moisture.

In appearance it resembles Johnson Grass, but does not have the aggressive rootstocks, stools more freely, has more and broader leaves, is an annual and will not become a weed.

As it is an annual, it must be seeded each year, like Sorghum and Millet. The seed should not be sown until the ground becomes thoroughly warmed in spring. It may be broadcasted or drilled at the rate of 16 to 24 lbs. per acre, in which case it usually grows three to five feet high; or it may be sown in rows and cultivated, at the rate of 4 to 6 lbs. per acre, and sometimes grows six to nine feet high. It may be cut several times during the season, is palatable and stock does well when fed on the hay.

Price, \$22.00 per 100 lbs.; less than sack lots, 50c per lb.

ENGLISH RYE GRASS

(*Lolium Perenne*)

English, or Perennial, Rye Grass is especially adapted to the country west of the Cascade Mountains, where it is quite popular but not so generally grown as it deserves. It has high feeding value, is relished by all kinds of stock, and is good in both hay and pasture mixtures. It prefers moist, rich loam or clay soils, but does well almost any place. It makes a quick, strong growth, and when sown thickly is excellent in mixtures for lawns or golf links. When used alone, for pasture or hay, sow at the rate of about sixty pounds per acre.

Price, \$10.00 per 100 lbs.; less than sack lots, 12c per lb.

Meadow Fescue

(*Festuca Pratensis*)

This is also known as English Blue Grass. It thrives in thin, dry soils, and will stand a great deal of abuse. Valuable in pastures and meadows, mixed with other grasses. When used alone, sow forty pounds per acre.

Price, \$17.50 per 100 lbs.; less than sack lots, 20c per lb.

Sheep's Fescue

(*Festuca Ovina*)

Though of dwarf growth, it grows thickly, yielding a large amount of nutritious herbage, and is valuable in pasture mixtures. It prefers dry uplands, and thrives in poor, shallow, gravelly soils. Although a bunch grass, it may be included in lawn mixtures on account of its fine foliage and dwarf, dense growth. Sow at the rate of thirty-five pounds per acre when used alone.

Price, \$23.00 per 100 lbs.; less than sack lots, 30c per lb.

Prices are subject to change. For current prices see enclosed supplement or later issues, which will be mailed on request.

ITALIAN RYE GRASS

(*Lolium Italicum*)

Italian Rye Grass is supposed to be a biennial, but on the Pacific Coast it will last almost indefinitely, and is one of the most valuable pasture grasses, as it produces green feed late in the season after other grasses are past their prime. It makes a rapid growth and will furnish more green pasture in midsummer than any other grass. It is valuable for sowing on logged-off land, and may be sown either in fall or spring. Sow at the rate of sixty pounds per acre when used alone.

Price, \$10.00 per 100 lbs.; less than sack lots, 12c per lb.

Fine Leaved Fescue

(*Festuca Tenuifolia*)

Similar to Sheep's Fescue, but with much finer leaves; it has the same dwarf growth and drought resisting qualities, and is suitable in pasture mixtures for dry and inferior soils. Also suitable for dry slopes on lawns. Sow at the rate of thirty pounds per acre when used alone.

Price, \$43.00 per 100 lbs.; less than sack lots, 45c per lb.

Hard Fescue

(*Festuca Duriscula*)

More dwarf and less vigorous than Sheep's Fescue, but useful in pasture mixtures for dry uplands and poor soils. Sow thirty pounds per acre.

Price, \$23.00 per 100 lbs.; less than sack lots, 30c per lb.

Red Fescue

(*Festuca Rubra*)

A creeping rooted species, forming a close and lasting turf, resisting drought and thriving on inferior soils, gravelly banks and exposed hillsides. Sow thirty pounds per acre when used alone.

Price, \$23.00 per 100 lbs.; less than sack lots, 30c per lb.

Prices do not include transportation charges. If shipped by parcel post, postage will be additional.

LILLY'S GRASS MIXTURES FOR PASTURES AND MEADOWS

The Most Suitable Grasses in Correct Proportions for Given Purposes

WHETHER to be used for hay or for pasture, much is gained by sowing a mixture of several suitable varieties of grass and clover seeds. It is especially desirable for pasture, for, by selecting the proper grasses, we have a mixture containing early, medium and late grasses; also, by using a combination of bunch grasses, deep-rooting grasses and grasses with creeping rootstocks we have a mixture which will produce a tough and lasting turf.

A mixture for hay must contain grasses which will mature at the same time, are tall-growing and will produce the maximum amount of hay of the best quality.

The grasses and clovers in our mixtures have been carefully selected by experts, and are the best combinations for the purposes, conditions and soils for which they are intended. The seeds contained in them are the same as listed elsewhere in this catalog, and comply strictly with the Pure Seed Law.

LILLY'S No.1 Pasture Mixture

Especially prepared for wet bottom-lands. It contains the Cascade Mountains, as follows: Meadow Fescue, Red Top, Alsike, English Rye Grass, Kentucky Blue Grass, Canadian Blue Grass, Red Clover, Italian Rye Grass and Orchard Grass.

LILLY'S No.2 Pasture Mixture

For dry up-lands, and is especially useful for sowing on logged-off and burned-over lands west of the Cascade Mountains. It is composed of White Clover, English Rye Grass, Italian Rye Grass, Canadian Blue Grass, Meadow Fescue and Kentucky Blue Grass.

LILLY'S No.3 Pasture Mixture

Contains grasses adapted to the dry, sandy soils east of the Cascade Mountains, as follows: Meadow Fescue, Kentucky Blue Grass, Brome Grass, English Rye Grass, Italian Rye Grass and White Clover.

PRICES, ANY OF THE ABOVE PASTURE OR HAY MIXTURES.

Found, 20c; 10 lbs., 16c per lb.; 50 lbs., 15c per lb.; 100 lbs., \$14.00; F. O. B. Seattle or Portland.

Any of these mixtures may be sown either in spring or fall, and should be sown at the rate of twenty to thirty pounds per acre. As the heavier seeds are inclined to settle to the bottom, they should be thoroughly stirred before sowing.

LILLY'S No.1 Hay Mixture

Composed of grasses and clovers suitable for wet bottom-lands, as follows: Red Top, Alsike, Red Clover, Orchard Grass, Meadow Fescue, Timothy and English Rye Grass.

LILLY'S No.2 Hay Mixture

Suitable for up-lands and other soils west of the Cascade Mountains except very wet land. It is composed of Timothy, English Rye Grass, Red Clover, Meadow Fescue and Canadian Blue Grass.

LILLY'S No.3 Hay Mixture

Contains grasses suitable for the dry, sandy soils east of the Cascade Mountains, as follows: Timothy, Red Clover, English Rye Grass, Meadow Fescue and Brome Grass.

LILLY'S VICTORY OATS

A New Variety Excelling Others in Yield

In our tests to choose from all promising varieties the best oat for the Northwest, we have found that a new variety, the Victory, imported from Sweden, is as far ahead of all others in yield as Swedish Select is in quality.

The superiority of the Victory Oat is particularly striking on heavy and medium soils. In our experiments for three years, and in the official variety tests of Sweden extending over several years, the Victory has always produced the best yield.

Owing to its many good qualities, we believe that it will be the standard oat for the Northwest. It is medium in maturity. The grain is somewhat smaller than the Swedish Select, and is of a slightly reddish shade. The straw is of medium height, particularly firm and elastic, making it resistant to lodging.

While the Victory Oat is not of such specially fine quality of grain as the Swedish Select, owing to the immense yield it is the oat that the farmer will find profitable.

In our comparison tests, on medium heavy soil, on San Juan Island, under identical conditions, the yields were as follows: Victory, 3620 lbs.; Swedish Select, 3440 lbs., and a local variety, 2980 lbs. per acre.

Our seed is absolutely pure, and is grown with special care, in Western Washington, from seed stock imported from Sweden.

Price, \$3.00 per 100 lbs.; less than sack lots, 4c per lb.
F. O. B. Seattle or Portland.

LILLY'S ABUNDANCE OATS

A Promising New Variety

This new hybrid oat is so highly recommended that we gave it a trial last season, and it has made such a splendid showing that we have purchased seed stock and will grow a crop this season. We have a limited amount of the seed to offer as long as it lasts.

It is a very early variety, ten to fifteen days earlier than other varieties, but in our trial grounds it out-yielded some of the later well known varieties. It has a heavy root growth, making it resistant to drought. The straw is very strong and not liable to lodge. The large, plump, heavy kernels are white and thin skinned.

Price, 1b., 10c; 10 lbs. or more, 4c per lb.; 100 lbs., \$3.00. F. O. B. Seattle or Portland.

LILLY'S SWEDISH SELECT OATS

A Regenerated Strain of this Splendid Old Variety

Swedish Select has long been popular, but the variety deteriorated and most of the seed to be had now is very inferior. We procured from Garton Bros., the famous plant breeders of England, a quantity of pure seed of their regenerated strain, and it is from this stock that our seed is grown. It is grown in the Northwest and thoroughly acclimated.

It is a large, white, head oat; plump and very

heavy, weighing 48 lbs. to the measured bushel. It is about two weeks earlier than most other varieties, and yields 15 per cent more than any other variety that we have tested except Victory.

The straw is medium and extra large, making it less liable to lodge than any other oat. This, in addition to the heavy yield and splendid quality, makes it a most valuable oat for the Northwest.

Price, 1b., 10c; 10 lbs. or more, 4c per lb.; 100 lbs., \$3.00. F. O. B. Seattle or Portland.

Prices are subject to change. For current prices see enclosed supplement or later issues.

LILLY'S HULLESS OATS

Something Entirely New. The Grain Thrashes Out Like Wheat

Hulless Oats are now a novelty in this country, but we believe that they are bound to become very popular, and they may revolutionize oat growing. For many purposes, hulls on oats are a great disadvantage, and hulless oats will be much more valuable. They will take the place of Oat Groats, which sell for \$40.00

to \$50.00 per ton, and they will be one of the very best of poultry foods, as well as being fully as good as common oats for all other purposes. We know the advantages of Hulless Barley, and Hulless Oats will be even more advantageous.

We procured a small quantity of this seed from the Orient, and for three years have been growing and testing it. It has proved to be entirely practical, and although the yield was not so great as the common varieties, we must bear in mind that there were no hulls included in the weight. Last season the yield was 1600 lbs. per acre, but conditions were not of the best, and the common variety grown for comparison under identical conditions yielded only 2000 lbs.

While growing, these oats appear the same as other oats, but when threshed they shell out like wheat. The straw is rather short, but the head is large and bears more kernels. Than common oats, as is shown by accompanying halftone of the grain from one head. The grain is white and plump.

All farmers should give Hulless Oats a thorough trial, and we especially recommend them to poultrymen in this section where quantity of seed, and would suggest that you

Price 25c, per lb. Postage additional.

The grain from one head of Lilly's Hulless Oats.

oats are a better crop than wheat. We have only a limited order early.

LILLY'S BLACK ALASKA OATS

A Very Hardy Black Oat Especially Valuable for Fall Sowing

This is an extremely hardy black oat, and is especially valuable for fall sowing; it is also preferred by many for spring sowing. It is a very heavy head oat, with thick, black hull, and large, plump, dark colored kernels, and is a heavy yielder. It stools freely; the straw is large and strong, not liable to lodge; and is a splendid support for vetch. Our seed is very superior, being grown in Washington from seed of a perfected strain which we imported from Sweden.

Price: 1b., 10c; 10 lbs. or more, 4c per lb.; 100 lbs., \$3.00; F. O. B. Seattle or Portland.

American Banner Oats

A very popular white, head oat. The kernels are short, plump and white; the straw is stiff and stands up well; and it is a heavy yielder.

Price: \$2.50 per 100 lbs.; less than sack lots, 4c per lb.

Gray Winter Oats

A very hardy gray oat, used mainly for fall sowing; excellent for sowing with vetch. It yields well, and the oats are large and plump.

Price: \$2.75 per 100 lbs.; less than sack lots, 4c per lb.

LILLY'S

SILVER KING
AND
GOLDEN NUGGET
WASHINGTON GROWN
CORN

LILLY'S WASHINGTON GROWN SEED CORN

Choice Selected Ears. Sold on the Cob

IT HAS BEEN DEMONSTRATED that corn can be grown successfully in the Northwest, but the soil and cultivation must be right and the seed must be acclimated. Being acclimated is of the utmost importance, more important with corn than with any other seed. We have chosen two varieties, Golden Nugget and Silver King, as being best suited to our climate and conditions, procured thoroughbred seed of those varieties, and have grown and acclimated them in Washington.

In order that the farmers may know the type and quality of corn that they are getting, we sell selected ears of these two varieties on the cob. We can also furnish the corn shelled if preferred.

LILLY'S

WASHINGTON GOLDEN NUGGET CORN

Our tests prove this to be the best yellow dent corn for the Northwest. The stalks grow to a good height, producing one or two good ears each. The ears are ten to eleven inches long, fourteen to sixteen rowed, and well filled over butt and tip. The cobs are small and the kernels deep, flinty, slightly dented and of a beautiful golden yellow color.

This corn is grown in Washington from thoroughbred seed, and is tested for germination. We have grown splendid crops, perfectly matured, proving that it will mature in the Northwest when soil and culture are favorable.

Sold either on the cob or shelled.

SELECTED EARS: 15c each; two for 25c;
\$1.00 per dozen; \$8.00 per 100 ears.

Shelled: 1 lb., 10c; 10 lbs. or more, 6c per lb.; 100 lbs., \$5.00.

If shipped by parcel post, postage will be additional. One ear weighs about one pound.

LILLY'S

WASHINGTON SILVER KING CORN

A new and extremely early variety; the largest and best early white corn, and especially recommended for the Northwest. We have grown two excellent crops from thoroughbred seed, and it is thoroughly acclimated.

The stalks generally grow seven to eight feet in height with ears two and one-half feet from the ground. The ears are seven to nine inches long, smooth, straight rowed and of perfect shape, showing careful selection and perfect pedigree.

The kernels are large, pure white, dented and are deeper than any other early white corn. All corn is carefully tested for germination.

SELECTED EARS: 15c each; two for 25c;
\$1.00 per dozen; \$8.00 per 100 ears.

Shelled: 1 lb., 10c; 10 lbs. or more, 6c per lb.; 100 lbs., \$5.00.

If shipped by parcel post, postage will be additional. One ear weighs about one pound.

LILLY'S

Northern Grown Seed Corn

	1 lb.	10 lbs.	50 lbs.	100 lbs.
LEAMING IMPROVED. Early yellow dent corn; long, narrow kernels, per lb.	.10	.05	.04½	.04
IOWA GOLD MINE. A medium early golden-yellow dent corn.....	.10	.05½	.05	.04½
PRIDE OF THE NORTH. A splendid quick-growing yellow dent corn.....	.10	.05	.04½	.04
CHAMPION WHITE PEARL. A large, late, white dent corn.....	.10	.05½	.05	.04½
EARLY CANADA. An early yellow flint variety.....	.10	.05	.04½	.04
KING PHILIP. An early, red flint corn, adapted to the Northwest	.10	.05½	.05	.04½
SANFORD WHITE FLINT. A reliable, early, large, white flint corn.....	.10	.05½	.05	.04½
MINNESOTA KING. Yellow dent; recommended for the Northwest.....	.10	.05½	.05	.04½
SWEET FODDER CORN. A sweet corn, producing an abundance of leaves	.10	.05½	.05	.04½
RED COB ENSILAGE CORN. A field corn for fodder and ensilage.....	.10	.05½	.05	.04½

Give corn a good start with a light application of Nitrate of Soda early in the season.

LILLY'S SUN WHEAT

A New Winter Wheat Especially Adapted to the Northwest

Following our regular policy, we have for several years been experimenting with many varieties of wheat for the purpose of choosing the varieties best suited to conditions in the Northwest. Our tests have proven that Sun Wheat excels all others in yield and quality, especially for the country west of the Cascade Mountains.

Sun Wheat is a remarkable new winter wheat, imported from Southern Sweden, and is the heaviest yielder of them all. It ripens earlier than most other varieties. The grain is plump, of a reddish color, and the weight per measured bushel is above the average. It does well on rather light soil, and is resistant to rust and smut. The heads are compact, firm and uniform; very similar to Club Wheat but much longer. Its stooling habit is especially good. The straw is of medium height, erect and very stiff.

In a comparative test, in adjoining fields and under identical conditions, Sun Wheat yielded 55 bushels and Club Wheat 40 bushels per acre.

The seed is grown for us on contract, from specially selected seed, and is under the direct supervision of our grain expert from the time the land is plowed until the seed is threshed and cleaned.

Price: 1b., 10c; 10 lbs. or more, $3\frac{1}{4}$ c per lb.; 125 lb. sack, \$3.45. F. O. B. Seattle or Portland.

MARQUIS WHEAT

A Highly Recommended New Spring Wheat

This new spring wheat is so highly recommended that we have purchased a stock of the seed, although we have not yet given it a thorough trial. It was originated by the Canadian Government Agricultural Department, and is a cross between Life and Red Calcutta.

The Washington State Agricultural Experiment Station describes it as follows: "Marquis is an early maturing red spring wheat which has been introduced recently from Canada. It may be grown in the place of Bluestem where an early maturing wheat is desirable. It does not shatter easily and stands well. It has a short, plump, very hard kernel and is of good quality."

Price: 1b., 10c; 10 lbs. or more, $3\frac{1}{4}$ c per lb.; 125 lb. sack, \$3.45. F. O. B. Seattle or Portland.

LILLY'S PEDIGREED BLUESTEM WHEAT

Specially Selected Seed

Bluestem has long been the standard and is still unexcelled for the Northwest. East of the mountains it is extensively grown as a spring wheat in the drier sections, but on the coast, where the winters are mild, it is sometimes seeded in fall; and with the exception of Sun Wheat, it appears to be the only really satisfactory wheat for this section. Its popularity is due to its drought resistance, heavy yielding capacity, non-shattering character and high milling value. Our seed is of the finest quality, carefully selected and thoroughly re-cleaned.

Price: 1b., 10c; 10 lbs. or more, $3\frac{1}{4}$ c per lb.; 125 lb. sack, \$3.45. F. O. B. Seattle or Portland.

Prices are subject to change. Current Price List will be mailed on request.

Prices shown in this catalog do not include transportation charges except in the few cases where so specified.

LILLY'S PETKUSER RYE

The Best Winter Rye for the Northwest

After testing all the promising varieties of rye for several years, we are convinced that Petkuser is by far the best suited to the Northwest. Our tests prove conclusively that it outclasses all other varieties in both yield and quality.

Our original seed stock was imported from Sweden, where this variety has proved to be the best in that country, where rye is one of the main crops. From that seed we have grown splendid crops, and now have a good stock of seed which is thoroughly acclimated to the Northwest, and which we are pleased to recommend to our customers.

The heads are long, four rowed, and the kernels are larger than the common rye. The straw is strong and will not lodge under ordinary weather conditions. It yields much heavier than any other variety that we have tested, and it will fill well on soil that is usually considered too rich for rye.

Price: Lb., 10c; 10 lbs. or more, 4c per lb.; 50 lbs. or more, 3½c per lb.; per sack, 125 lbs., \$3.75; F. O. B. Seattle or Portland.

LILLY'S RUSSIAN WINTER RYE

A Standard Variety Which Produces Excellent Results

With the exception of Petkuser Rye, this is the best in yield and quality for grain, grain hay, straw or green forage. Our seed is specially re-cleaned, and only the largest and heaviest kernels are retained.

Rye is a valuable and hardy crop, providing green forage in late fall and early spring. It matures more quickly than most other crops, and can be made to yield a good crop on soil that is too poor for other cereals. It is splendid to sow with vetch or field peas. In food value it is very similar to wheat and is a very good hog food.

Price: Lb., 10c; 10 lbs. or more, 3½c per lb.; 50 lbs. or more, 3c per lb.; per sack, 125 lbs., \$3.15; F. O. B. Seattle or Portland.

LILLY'S EMMER, OR SPELTZ

Produces Good Crops Where Other Grains Fail

Emmer has been grown in this country for several years, but has been commonly called "Speltz," which is in error, as Speltz is an entirely different grain, little known in this country. Emmer is highly recommended by the United States Department of Agriculture in Farmer's Bulletin No. 139, "Emmer, a Grain for the Semi-arid Regions," which may be procured by writing to your congressman, or to U. S. Dept. of Agriculture, Washington, D. C.

It is a species of wheat, resembling two-rowed barley in appearance, and is extremely hardy and drought resisting, making it especially valuable for stock food, either as grain, hay or forage, in dry regions or on poor soils.

It will produce fair crops under almost any condition of soil or climate, but its greatest value lies in its ability to produce a crop in hot, dry localities, and on poor soil, where other grains would fail. Under such adverse conditions it will produce more and better stock food than any other grain. In feeding value it equals barely or rye. When thrashed it retains the hulls, like barley, but the beards are very short, as shown in accompanying cut. It is generally sown in spring, in the same manner as wheat or barley, at the rate of about 100 lbs. per acre.

Price: Lb., 10c; 10 lbs. or more, 4c per lb.; 50 lbs., 3½c per lb.; 100 lbs., \$2.75; F. O. B. Seattle or Portland.

Prices shown in this catalog are prices in effect at the time of going to press, and are subject to change. Current prices are shown in supplements which we publish as occasion demands, and which will be furnished on request.

Prices do not include transportation charges. If goods are to be shipped to a station at which there is no agent, or by parcel post, remittance must include a sufficient amount to pay charges.

LILLY'S
PETKUSER
RYE

LILLY'S
CROP
BOOK

Contains
Cultural
Directions

Free with
any order

LILLY'S WHITE HULLESS BARLEY

BOTH BEARDLESS AND HULLESS

Thrashes Out Like Wheat. Making It Valuable Stock and Poultry Food

Barley is one of the very best stock foods, either as grain or hay. It is also splendid as a nurse crop for grasses and clover and as a support for vetch and peas. It is a shallow feeder, and requires a mellow, rich soil with fertility near the surface. It is not a crop for poor, sandy, or worn out land, neither does it do well on newly cleared land, but no other crop responds more readily to good soil and thorough cultivation, and the careful farmer who gives a little extra attention to thorough preparation of the soil will be amply repaid for his trouble.

The only objections to barley have been the long, stiff beards, which are objectionable in grain hay, and the hulls, which make the grain less valuable for feeding purposes. These objections are entirely overcome in White Hulless Barley, for it is entirely beardless, as shown in accompany-

ing halftone, and when thrashed is hulless, like wheat, to which the large, plump, hard grain is very similar. The hay is superior to any of the other grain hays, and the grain, especially when rolled or ground, is unexcelled as a grain food for horses, hogs, cattle or poultry.

White Hulless Barley is more productive than wheat, and matures about two weeks earlier. It may be sown as late as July, provided sufficient moisture may be depended upon, making it a valuable catch crop. West of the Cascade Mountains it is sometimes sown in fall. It is sown the same as wheat, at the rate of about one hundred pounds per acre.

Price: Lb., 10c; 10 lbs., 10c; 100 lbs., 10c; 1000 lbs., 10c; 50 lbs., or more, 4c per lb.; per lb.; sack lots, 125 lbs., \$3.75.

WISCONSIN PEDIGREE BARLEY

Best Bearded Barley

This barley was introduced by the Wisconsin Agricultural Experiment Station, the originators of the well known Oderbrucker Barley, to which they claim that this is much superior. It has very nearly replaced all other varieties of bearded barley in Wisconsin, the greatest barley growing state in the Union.

The heads are exceedingly long and are uniformly well filled; the straw is strong; the grain is large, plump and heavy, and the experiment station claims that it outyields all other bearded varieties five to six per cent.

Price: Lb., 10c; 10 lbs., 10c; 100 lbs., 10c; 1000 lbs., 10c; 50 lbs., or more, 4c per lb.; 100 lbs., \$3.00.

Six-Row White Barley

Specially selected re-cleaned seed of the common, white, six-rowed, bearded barley which has been most generally grown. It is sometimes sown in fall west of the Cascade Mountains.

Price: \$2.25 per 100 lbs.; less than sack lots, 3c per lb.

LILLY'S
WHITE
HULLESS
BARLEY

VERMONT BEARDLESS BARLEY

Entirely Beardless

This is a highly improved strain of Beardless Barley, entirely free from bearded heads, making it very much superior to the bearded varieties for hay. It is also preferable for grain, as it is as easy to handle and thrash as oats.

Vermont Beardless Barley is very early, and as it is hardy, may be sown early in spring, or it may be sown as late as the first of July. The straw is good, stands up well, and it is a splendid variety to sow with vetch or peas. It is very productive.

Price: Lb., 10c; 10 lbs., 10c; 100 lbs., 10c; 1000 lbs., 10c; 50 lbs., or more, 4c per lb.; 100 lbs., \$3.25.

Beardless Barley

The ordinary strain of beardless barley, which until recently has been the best obtainable. On account of not being thoroughly perfected by selection, it may produce some bearded heads.

Price: \$2.50 per 100 lbs.; less than sack lots, 3½c per lb.

LILLY'S VETCH

A Valuable Hay, Ensilage, Pasture, Soiling and Fertilizing Crop

THE VETCHES are among the most valuable leguminous crops that can be grown in the Northwest for hay, ensilage, pasture, soiling, green manure, and for a cover crop for orchards. In food value they are about the same as Alfalfa, are consumed with less waste and are relished by stock. They are of the greatest value as fertilizers. Like Alfalfa, Clover, Peas and other legumes, Vetch has the power of drawing nitrogen from the air and distributing it in the soil. Even though the crop is removed from the land, the soil will be improved; when plowed under, the benefit will be much greater.

The names Spring Vetch and Winter Vetch, are misleading. Spring Vetch is the variety used almost exclusively west of the Cascade Mountains, and in other mild, cool, moist climates, for either spring or fall sowing. Winter Vetch is used east of the Cascades and in climates where the winters are severe and the summers hot and dry, for either fall or spring sowing, although they are generally sown in fall.

LILLY'S

COMMON OR SPRING VETCH

(*Vicia Sativa*)

**For Spring or Fall
West of Cascades**

Common Vetch is perfectly adapted to conditions west of the Cascade Mountains; where it stands the winters admirably, and is generally sown in fall.

It is an annual legume of great value as a nitrogen gatherer, as a green manure, and as a soiling, hay and pasture plant. When sown in early fall it is a splendid cover crop for orchards.

It makes excellent ensilage, and dairy cattle prefer the hay to that of Red Clover. The yield of cured hay is from one and one-half to four tons per acre.

Common Vetch sown early in September should be ready for feeding green about the middle of April or first of May. It may be sown as late as the middle of November and should be ready for feeding by the first of June. When sown early in spring it should be ready for feeding late in June.

Common Vetch is generally sown at the rate of sixty to ninety pounds per acre, with about fifty pounds of oats, wheat, rye or barley to support the vines.

Price, \$5.50 per 100 lbs.; less than sack lots, 7c per lb.

LILLY'S

HAIRY OR WINTER VETCH

(*Vicia Villosa*)

**For Spring or Fall
East of Cascades**

Winter, Sand or Hairy Vetch is another annual legume, similar to Common Vetch and valuable for the same purposes, but it is suitable for climates where the winters are more severe and the summers are hotter and drier. It is the variety used east of the Cascades, generally for fall sowing, but it may also be sown in spring.

It makes splendid hay, ensilage, pasture, green feed, and is of special value as a fertilizer.

It is used as a cover crop for orchards, prevents washing of the soil during the winter, and when plowed under in spring makes one of the very best fertilizers, furnishing nitrogen and humus, both of which are needed by the soils in that section. Nitrogen

is the most expensive fertilizing element, and is the element most lacking.

The seed of Hairy Vetch is smaller than Common Vetch, and thirty pounds is sufficient to sow an acre. With it should be sown about sixty pounds of wheat or rye to keep the plants off the ground.

Price, \$17.00 per 100 lbs.; less than sack lots, 20c per lb.

Prices shown in this catalog are subject to change. Current Price List will be mailed on request.

LILLY'S FIELD PEAS

**A Valuable Grain, Hay, Ensilage and Fertilizing Crop for the Northwest
Takes the Place of Corn for Hog Raising**

SOIL and weather conditions in the Northwest, especially west of the Cascade Mountains, are ideal for growing peas, and field peas is one of our most valuable crops for either grain, hay, ensilage or soiling. The grain is a splendid food for hogs, and makes hog-raising possible in this section where it is difficult to mature corn properly. Pea-fed pork is unexcelled. Peas is also the most satisfactory crop for "hogging down." The grain is a standard food for pigeons, and pea meal is good in mash foods for poultry. The hay and ensilage is very nutritious and is relished by most all stock, dairy cows in particular.

They are excellent as pasture or as green food for growing pigs and other stock.

Peas do best when sown very early in spring. They are sometimes sown in the fall west of the Cascades. When sown early they will mature in July, in time to plant the ground to some other crop. They are usually drilled or sown broadcast at the rate of one hundred pounds per acre, together with about one hundred pounds of oats, wheat, rye or barley to support the vines. They produce twenty-five to thirty bushels of grain, or two to four tons of hay per acre. Like clover and alfalfa, they are legumes, and are very valuable as a fertilizer.

Canadian Field Peas

The Yellow Canadian is the most popular variety for all purposes. It is hardy, early and productive. Our seed is grown especially for us, is carefully re-cleaned, and only the largest and plumpest seed is retained.

Price (subject to change): \$6.00 per 100 lbs. Less than sack lots, 7c per lb.

Green Field Peas

The seed is larger than the Canadian Field Peas, and they have a bluish color, but are very similar in all other respects.

Price (subject to change): \$6.00 per 100 lbs. Less than sack lots, 7c per lb.

Whip-Poor-Will Cow Peas

Cow Peas are grown extensively in the south for fodder and to plow under for fertilizer. They may be grown in Eastern Washington and Eastern Oregon, but should not be sown until the ground becomes thoroughly warmed in spring. They cannot be grown successfully west of the Cascade Mountains.

Price (subject to change): \$8.00 per 100 lbs. Less than sack lots, 9c per lb.

LILLY'S MILLET

A Valuable Catch Crop for Hay and Forage

Millet is a quick-growing annual, and is mostly useful as a catch crop for hay. It may be sown as late as the last of July, after some early crop has been removed; or it may be sown in spring, after danger of frost is past, and harvested in time for a fall sown crop.

For hay it should be sown at the rate of about thirty pounds per acre; for seed twelve to fifteen pounds. It produces two to five tons per acre of very nutritious hay.

German or Golden Millet

A medium early variety, growing four to five feet high and making a very good quality of hay or forage. It will thrive in almost any soil or climate, and sometimes produces as much as five tons of hay or seventy bushels of seed per acre.

Price, \$8.50 per 100 lbs.; less than sack lots 10c per lb.

Hungarian Millet

This is sometimes called Hungarian Grass. It grows about three feet high, with slender stems and abundant leaves, and produces two or three tons of excellent hay per acre. It is a week earlier than German Millet, and requires less moisture.

Price, \$8.50 per 100 lbs.; less than sack lots, 10c per lb.

Siberian Millet

A comparatively new variety, imported from Russia; earlier than either German or Hungarian, and very hardy, withstanding more heat and drought than any other variety. It makes a rank growth, with abundance of leaves, and produces immense crops of excellent hay.

Price, \$8.50 per 100 lbs.; less than sack lots, 10c per lb.

Japanese Barnyard Millet

Grows six feet or more in height and produces immense crops of splendid hay, forage or ensilage. It does well in all climates and soils. Less seed is required than of other varieties.

Price, \$12.50 per 100 lbs.; less than sack lots, 14c per lb.

Feterita

A non-saccharine sorghum of special value in the dry farming sections. It is similar to Kaffir Corn, but matures three or four weeks earlier. It makes excellent fodder or produces a good yield of grain.

Price, \$10.00 per 100 lbs.; less than sack lots, 12c per lb.

Kaffir Corn

A splendid forage plant for the country east of the Cascades, where it produces large quantities of seed or excellent fodder, but it is of little value on the coast.

Price, \$3.00 per 100 lbs.; less than sack lots, 5c per lb.

Broom Corn

Another non-saccharine cane, grown for seed, fodder and for manufacturing brooms, under the same conditions as Kaffir Corn.

Price, \$8.00 per 100 lbs.; less than sack lots, 10c per lb.

Sunflower

The seed is excellent poultry food when mixed with grains, and should be more generally grown by poultrymen. Price, 1 lb., 15c; 10 lbs., 10c per lb.

Sorghum

[Early Amber Cane]

East of the Cascade Mountains it will produce a good crop of seed or two or more crops of splendid forage, being very rich, sweet and succulent. West of the mountains it will not produce seed and although it will produce fair crops of fodder, there are other crops more profitable.

Price, \$6.00 per 100 lbs.; less than sack lots, 7c per lb.

Japanese Buckwheat

Excels all other varieties. The grain is large, it yields heavy, ripens early, stands up well and the flour is fully equal to any other. It remains a long time in bloom and is excellent for bee pasture.

Price, \$5.00 per 100 lbs.; less than sack lots, 6c per lb.

Soja Beans

Grown in hot, dry climates for forage and green manure, similar to Cow Peas, but are not grown on the Pacific Coast.

Price, \$10.00 per 100 lbs.; less than sack lots, 12c per lb.

Flax Seed

Sow seed in spring on moist land, at the rate of thirty pounds per acre if grown for seed, or twice that amount if grown for fiber.

Price, \$6.00 per 100 lbs.; less than sack lots, 7c per lb.

LILLY'S THOUSAND HEADED KALE

Supplies Green Food for Cows, Sheep, Hogs and Poultry During Winter

Thousand Headed Kale, or Cow Kale, as it is sometimes called, is one of the most useful crops for the Pacific Coast. It belongs to the cabbage family, is succulent and nutritious, and is unequaled as green food for stock, especially poultry and cows. West of the Cascade Mountains it is left in the field all winter and cut as required for feeding.

The seed is generally sown in drills three feet apart early in spring and the plants transplanted when six to eighteen inches high. They may be transplanted to ground from which an early harvested crop has been removed, providing sufficient moisture can be depended upon. One pound of seed will produce sufficient plants for one acre. The plants should be set three feet apart each way. They grow about four feet high, with a wide spread of leaves, and a single plant often weighs 30 to 40 pounds.

For summer feeding, the seed may be sown in fall and the plants transplanted in spring, but it seldom yield

as heavy as that grown for fall and winter feeding. Like cabbage, kale requires rich soil and thorough cultivation. Under favorable conditions it will sometimes yield as high as sixty tons of green feed per acre. It is not only an economical food, but by supplying succulent green food will keep stock in perfect health. It solves perfectly the difficult problem of supplying green food for poultry. Several good articles in regard to the culture and uses of kale are contained in the Crop Book, which we will furnish free with any order if requested. Price: Oz., 10c; $\frac{1}{4}$ lb., 20c; lb., 35c; 10 lbs., 30c per lb. Postage additional.

LILLY'S

MARROW CABBAGE CHOU MOELLIER

White Stemmed Marrow Kale

Marrow Cabbage is a valuable dairy and poultry food, very similar to Thousand Headed Kale, but even more prolific. The plants average four to six feet in height, with stalks five to six inches in diameter, and weigh fourteen to twenty pounds. The stalks are edible and are relished by cows. The lower leaves are broken off and fed as they mature.

The plant is not so hardy as Thousand Headed Kale, but is most valuable for green feed in fall and early winter. The culture is the same as for kale and cabbage. One pound of seed will produce plants for one acre.

Price: Oz., 10c; lb., \$1.00.

LILLY'S

DWARF ESSEX RAPE Summer and Fall Forage or Pasture

Dwarf Essex Rape is a valuable forage and pasture crop for stock, especially sheep and hogs, and is particularly useful when other green food is scarce during the dry season in summer and fall. It is splendid for cattle, but must be fed judiciously to avoid tainting the milk.

It may be sown any time from early spring until late summer after an early harvested crop is removed, and will be ready for pasturing or cutting in six or eight weeks. If not cut close it will sprout up again in fall, and as it will stand considerable frost, will furnish green feed far into the winter. It thrives best in cool weather, and is especially adapted to our climate on the Pacific Coast.

It will thrive on soil suitable for cabbage or turnips, and requires thorough preparation of the soil. It may be sown broadcast at the rate of about five pounds per acre, but best results are obtained by sowing in drills and cultivating. Cultural directions are contained in the Crop Book.

Price: Lb., 25c; 10 lbs., 20c per lb.; 100 lbs., \$18.00. Postage additional.

LILLY'S POULTRY FOODS
Are Made For Special Purposes
And Produce Definite Results

LILLY'S SEEDS are tested for purity and germination. They grow if cultural conditions are right

LILLY'S DANISH SLUDSTRUP MANGEL

Valuable Food for Stock and Poultry

THIS SPLENDID new variety is undoubtedly the best mangel grown. Our customers who grew Sludstrup last season were delighted with it; and in our trial grounds it made a much better showing than any other. It is a long mangel, smoother than others, of a reddish-yellow color, grows well above ground and is easy to pull. It is highest in food value, and yields phenomenally.

Our seed was procured from the originator in Denmark, where the variety has been awarded a first-class certificate by the Danish government. The Danish government has done much to improve the quality of farm and garden products, and their approval of a variety is evidence of its superiority. Sold only in sealed packages.

Prices: Pkt., 10c; $\frac{1}{2}$ lb., 25c; 1 lb., 45c; 5 lbs. 40c per lb.; 10 lbs. 35c per lb.

These prices do not include postage. If to be shipped by parcel post, postage will be additional.

GOLDEN GIANT MANGEL

An excellent variety, of immense size and uniform shape. The flesh is light yellow, fine grained, and very rich. It is a good keeper, and produces wonderfully—forty to sixty tons per acre. Sold only in sealed packages.

Prices same as Danish Sludstrup.

ROYAL RED MANGEL

The roots are very large, uniformly straight, well formed and solid; tops small; color deep red. It produces immense bulk and tonnage, roots weighing twenty pounds being not uncommon. Sold only in sealed packages.

Prices same as Danish Sludstrup.

Giant Intermediate, or Gate Post Mangel

Intermediate between the long and globe-shaped varieties. The roots are large; neck small and short; flesh nearly white, sweet and tender. A big cropper.

Prices: Pkt., 10c; $\frac{1}{2}$ lb., 25c; 1 lb., 45c; 5 lbs., 40c per lb.; 10 lbs., 35c per lb.

These prices do not include postage. If to be shipped by parcel post, postage will be additional.

Klein Wanzleben Sugar Beet

The variety most generally grown for sugar. It gives good returns in ordinary soil, and is very rich in feeding qualities.

Price, Pkt., 10c; $\frac{1}{2}$ lb., 25c; 1 lb. 45c; 5 lbs., 40c, per lb.; 10 lbs., 35c, per lb.

These prices do not include postage. If to be shipped by parcelpost, postage will be additional.

HALF SUGAR MANGEL

Very sweet, succulent, and highly nutritious. The flesh is white, firm, crisp, and is greedily eaten by stock. It combines the size of the mangel with the great food value of the sugar beet. It is a heavy yielder, and the roots grow partly above ground, making harvesting easy. Sold only in sealed packages.

Prices same as Danish Sludstrup.

Yellow Globe Mangel

This variety is desirable only in shallow soils. The shape is globular; flesh yellow and white.

Prices same as Giant Intermediate.

Long Red Mangel

A large variety; producing immense crops. It grows much above ground, and is easy to harvest. The flesh is white shaded with red. Requires deep, loose soil.

Prices same as Giant Intermediate.

Golden Tankard Mangel

A well-known and popular stock beet. Large size; flesh yellow, nutritious, and well liked by all stock. It will grow in rather shallow soil.

Prices same as Giant Intermediate.

French White Sugar Beet

One of the best sugar beets, containing a large percentage of sugar. It is very nutritious, and is well liked by all stock.

LILLY'S

KING OF SWEDES

Rutabaga or Swedish Turnip

AN IDEAL yellow fleshed rutabaga. The flesh is sweet, remarkably fine grained, juicy, tender, solid to the center, bright yellow and very attractive, making it especially desirable for the table. Its enormous size and productiveness, hardiness and splendid keeping qualities make it equally desirable as a succulent winter feed for stock. Sold only in sealed packages.

Ounce, 10c; $\frac{1}{4}$ pound, 20c; pound, 60c; postpaid.

American Purple Top Improved

A popular variety for both field and table use. Very hardy and productive; flesh yellow, solid and sweet. A good keeper.

Pkt., 5c; oz., 10c; $\frac{1}{4}$ lb., 20c; lb., 60c; postpaid.

Skirving's Improved Purple Top

An excellent variety of large size and strong growth. A heavy cropper. Similar to American Purple Top, but larger. Flesh yellow.

Pkt., 5c; oz., 10c; $\frac{1}{4}$ lb., 20c; lb., 60c; postpaid.

Sweet Russian

A white fleshed variety of large size and good quality, but lacking the richness of the yellow fleshed varieties.

Pkt., 5c; oz., 10c; $\frac{1}{4}$ lb., 20c; lb., 60c; postpaid.

Monarch
or Tankard

A very distinct type, being of tankard, or oval shape. Very large and yields immensely. Flesh yellow.

Pkt., 5c;
oz., 10c;
 $\frac{1}{4}$ lb., 20c;
lb., 60c;
postpaid.

LILLY'S
CROP BOOK
will be given
FREE
with any order
if requested

LILLY'S KING OF SWEDES RUTABAGA

LILLY'S MASTODON
CARROT

The Best Stock Carrot

LILLY'S SELECT STOCK MASTODON CARROT is undoubtedly the best variety for stock feeding. It is a long way ahead of the long rooted varieties in yield, and is easier to harvest. The color is white; shape, short and thick, sometimes six inches in diameter, and has yielded as high as twenty-five tons per acre.

Carrots are excellent and economical stock food, equal to mangel wurzels in food value, and among the best substitutes for green food.

Sold only in sealed packages.

Ounce, 10c; $\frac{1}{4}$ lb., 30c; pound, 85c; postpaid. Write for prices on large quantities.

LILLY'S FERTILIZERS

Why You Should Use Commercial Fertilizers How to Use Them Profitably

FERTILIZERS FOR THE RICH SOILS OF WASHINGTON AND OREGON? YES, as a matter of fact we have more need for fertilizers than they have in the East and Middle West, where crop rotation provides a great deal of the necessary plant food. On the rich land of Washington and Oregon we can make greater profits by growing special crops, intensive farming, and by buying fertilizer to replace the plant food consumed. It is the highly specialized crop that pays, and those of us who are getting best results are returning the plant food to the soil in the concentrated form of commercial fertilizers in connection with green crops turned under to maintain the humus in the soil.

Fertilizer Needs of Washington Soils

By Prof. R. W. Thatcher.

MOST SOILS in the state of Washington are as yet fairly new. Their native or virgin fertility is not yet exhausted. There are, however, many different types of soils in the state, some of which do not naturally contain very large supplies of the different elements of plant food needed by crops.

Such soils are likely soon to "run out", and need application of fertilizers carrying the particular elements in which they are deficient. Other soils which carry fairly good supplies of the different elements of plant food have been improperly handled or wastefully cropped until badly out of condition. These can best be restored or built up in fertility by the use of fertilizers to stimulate increased

growth until the soils can be properly brought back into good condition.

Fertilizers may, therefore, be used for two separate purposes; namely, the application of some one or more single elements of fertility to correct deficiencies in those particular elements, or the application of a complete mixed fertilizer to stimulate crop growth.

The only possible means of determining whether fertilizers for either of these purposes can be profitably used is by field experiments. A chemical analysis of the soil indicates the total amounts of plant food which are present but does not show how much of this is available for use of different crops, nor does it prove whether the use of any given fertilizer would yield enough increase in crop growth to pay for the cost of the fertilizer. Field trials

Study your soil; it is the source of wealth.

with fertilizers are, therefore, the only conclusive evidence of their value.

But chemical analyses do indicate which elements are likely to be deficient because of an insufficient total supply. The Washington State Experiment Station has completed a soil survey in the course of which samples of every type of soil found in the state have been analyzed. The following brief statement of the conclusions to be drawn from these analyses will serve as a basis for field experiments with fertilizers on the different types of soil as mentioned.

Reclaimed tide flats are usually well supplied with all the essential elements of fertility but are likely to be "sour" because of excess of organic acids resulting from the decay of large amounts of organic matter. They, therefore, generally need lime as a fertilizer to correct this acidity.

The red-fir uplands or second bench lands usually contain fairly good supplies of mineral plant foods but limited amounts of humus, and need the plowing under of some clover crop or the addition of a complete fertilizer.

Alder bottom lands are rich in decaying vegetable matter but usually low in phosphorus and lime.

The potash content of all soils west of the Cascade Mountains is usually low, and for those crops like fruit and vegetables, which need large proportions of potash, fertilizers carrying potash are generally very beneficial.

Phosphorus is usually present in sufficient quantities in upland soils, but likely to be deficient in the lower lands.

Nitrogen is present in abundance in the bottom land soils, but often deficient in upper gravelly or clayey soils, particularly if they have grown large forests of fir and pine.

Special types of soil such as shot clay, beaver dam, gravel prairie, etc., require special treatment.

Marshy bottom lands, whatever the type, are almost invariably sour, because of the excess of decaying organic matter and lack of lime.

Shot clays are usually strong soils, ordinarily carrying a good supply of phosphorus and nitrogen, but are apt to be somewhat deficient in potash. The percentage of lime is rarely very high, but seems in most cases to be sufficient for plant needs. The plowing under of vetches or clovers gives specially good results on this type of soil.

The sage brush soils of the irrigated valleys east of the Cascade Mountains are very rich in lime, carry fair supplies of potash and phosphorus and are very low in nitrogen and humus. The addition of nitrogen carrying fertilizers or plowing under of leguminous crops is the first necessity, while for special fruit crops potash fertilizers are generally profitable.

Most of the upland soils of eastern Washington are very rich in all the mineral elements of fertility. The supply of humus and nitrogen is only moderate, and in regions of low rainfall is quite low. The proper attention to the humus supply will probably be all that will be necessary for long continued fertility, particularly for extensive cropping. For intensive cropping, such as market gardening, fruit growing, etc., the addition of humus forming fertilizers will give profitable results.

Available Fertility

By Prof. R. W. Thatcher.

SOIL FERTILITY means essentially favorable conditions for crop growth. This naturally depends upon many different things. For example, a soil might be abundantly supplied with all the necessary elements of plant food in proper form, yet if the soil were to remain dry throughout the season, no crops would grow in it. Again, a soil might contain abundant available fertility and plenty of moisture but remain frozen through an entire season, in which case no crop would grow. In a broad sense, therefore, fertility requires favorable conditions of moisture supply, temperature, state of tillage, sufficient supply of plant food of proper kind, etc. As commonly used, however, the term fertility means a sufficient supply of plant food in available form.

What is available plant food? A little thought will show that it is plant food in such form that it will dissolve in soil, water or plant root juices. Plants have no power or ability to absorb food in solid form. Plant food is taken from the soil through the roots and circulates in the sap. It must, therefore, be in liquid form, and available plant food is that

form of plant food which can be dissolved from the soil and so be taken up in liquid form. The availability of plant food is, therefore, measured by its solubility in plant juices.

All the chemical elements in the soil (of which there are about fifteen) may be taken up by the plants, but not all of them are of equal use or value. Some are not necessary at all to plant growth. Others which are necessary for plant growth are always present in the soil in abundance. A few which are absolutely necessary for all plant growth are commonly present in the soil in comparatively small proportions. These are the so-called "critical elements" of fertility; namely, nitrogen, phosphorus, potash and lime.

The element nitrogen is used by plants in building up the green growing foliage. Phosphorus is essential for the production of seeds. Potash aids in the building up of starches or sugars, which are essential parts of all plants. Lime is in some obscure way connected with the building of woody fiber.

Your land is like a store room; the plant food in the land is your stock in trade. To continue in business you must keep the stock replenished.

Obviously then, all these elements are necessary for every kind of farm crop, although different amounts are needed by different crops.

Lime, in addition to its value as a direct plant food, has much to do with the physical condition of the soil and the availability of plant food. Fertility, from the standpoint of plant food, therefore, requires a sufficient supply of each of these four critical elements in proper or available form.

Lime, potash and phosphorus are all found in rocks. They are the mineral elements of fertility.

Nitrogen is not a mineral element, and is not found in rocks. Nitrogen comes originally from the air, but must be converted into liquid or available form by the decay of plant tissue containing it. It can be taken from the air only by the bacteria which grow on the roots of leguminous clover plants, including alfalfa, clovers, vetches, peas, beans, etc. These bacteria take nitrogen from the air, and when they die and decay make the nitrogen which they contain available for other plants.

Most soils contain considerable supplies of all the essential elements of fertility, generally enough to last for a hundred years or more. The problem of fertility is that of getting this plant food into available form.

The chief agencies for dissolving mineral plant food materials are the bacteria and acids which are developed in decaying vegetable and animal matter. Rotting vegetation, or humus, is therefore the best agency for maintaining or increasing the availability of plant food.

This accounts for the well known beneficial effect of manure. The actual benefit of manure when applied to soils is at least

double the value of the plant food which the manure supplies, because of the fact that the manure in rotting dissolves and makes available plant food which was already present in the soil in unavailable form.

One of the best means of increasing fertility of soils is, therefore, the plowing under of some humus forming material. For this purpose barnyard manure is best. Next in value are so-called "green manures" or green crops plowed under. Of these the legumes are by far the best because they are the nitrogen gathering crops.

A red clover crop when plowed under adds to the soil about \$20.00 worth of nitrogen which the bacteria associated with it have taken from the air.

Other green crops, like rye, buckwheat, etc., when plowed under, produce humus, and, therefore, help to make available the plant food already present in the soil, but they do not add to the soil any of the critical elements of fertility which were not already present in the soil.

In the absence of a sufficient supply of barnyard manure, commercial fertilizers may profitably be used; particularly if the price of land, or market conditions make it undesirable to lose the use of the land while green leguminous crops are being grown to be plowed under.

Again, the addition of available fertility in the form of commercial fertilizers often profitably supplements the supply of available fertility which is naturally present in the soil or is developed by proper handling of the land.

The chief determining factor in the use of commercial fertilizer is, of course, the profit which may be obtained from their use.

Stable manure, although a complete fertilizer, is not a correctly balanced fertilizer. It contains too much nitrogen, and is liable to produce an excess of foliage at the expense of roots, fruit, or grain. The use of potash fertilizers in conjunction with stable manure is usually highly profitable.

Lime for Correcting Acidity in the Soil

By Prof. E. B. Stookey.

BASED on chemical analyses, it may safely be said that most soils in western Washington are in need of lime. The analyses in the U. S. Reconnaissance soil surveys of western Washington show a deficiency of from 0 to 30,000 pounds of limestone per acre, with the large number of samples showing a need of less than 2,000 pounds per acre.

This means that this much limestone is required to neutralize the acid in the soil. It is generally conceded that the greatest need of lime in the soil is to counteract acidity. Lime, however, is essential to plant growth, has a beneficial effect on the physical condition of soils, and aids in liberating plant food.

Where lime is needed the character of the plant growth is usually such as to indicate it. Sorrel and horse-tail rush are generally present, and replaces red clover. Red clover shows the need of lime in the soil as quickly as any other plant. The litmus paper test is fairly satisfactory. Blue litmus paper, pressed against moist soil, will turn red or pink if the soil is in need of lime. The length of time it requires to change color indicates in a general way the amount of lime required. If the action is slow, probably one thousand pounds of lime, or one ton of ground lime rock, per acre, would be sufficient. A light soil will require less lime than a heavy one.

The kind of lime to apply will depend on the soil condition and the result to be accomplished. This will be better understood if we know what the different forms of lime are, and the effect of each.

Lime, or calcium oxide, is known as quick-lime, burned lime, stone lime, lump lime, unslacked lime, etc. Calcium oxide is composed of forty parts calcium and sixteen parts oxygen by weight. In all lime fertilizer compounds, calcium is the element that should be considered.

We may consider the weight of calcium oxide as 56. When quick-lime is slaked it combines with water and forms hydrated lime, known chemically as calcium hydroxide. If we slake 56 pounds of pure lime there is produced 74 pounds of hydrated lime. The weight is increased almost half, and the bulk is more than doubled by this chemical addition of water. If just a sufficient amount of water is used, the lime will fall apart into a fine white powder.

If this 74 pounds of slaked or hydrated lime is exposed to the air a few days it will completely air slake, the water taken up chemically will be replaced by carbonic acid gas from the air, and there is produced 100 pounds of air slaked lime, known chemically as calcium carbonate.

Ground limestone rock is made from calcium carbonate rock, and is chemically the same as air slaked lime. Air slaked lime is usually in a finer state of division than ground limestone, and will contain some quick-lime and some hydrated lime.

If 100 pounds of pure limestone rock is kiln burned it will form 56 pounds of quick-lime. We see then that 56 pounds of quick-lime equals 76 pounds of hydrated lime or 100 pounds of air slaked lime or ground lime rock.

Some recent experiments carried on by the Pennsylvania State College show that ground lime rock is as effective for the correction of soil acidity as an equivalent amount of quick lime.

Quick lime is caustic in its effect; that is, it burns substances that it comes in contact with if moisture is present. If water is applied to lime it generates heat, and expands. Barreled lime often breaks the barrels, because of the absorption of moisture and exposure to air. If quick lime is put on the soil it does not remain long in lump form. As soon as water falls on lime it slakes and forms hydrated lime, and the hydrated form soon changes to the air slaked or carbonate form.

Theoretically the humus in the soil is burned by the lime undergoing these changes, and practically we find that the humus content of the soil organisms diminishes under such treatment. This decrease is probably due in part to the increased activity of the soil organisms working on the humus.

Ground lime rock or fully air slaked lime applied to the soil does not have a caustic action, and is not so chemically active, so the action of soil organisms is not so greatly accelerated. It does, however, correct soil acidity. Ground limestone and fully air slaked lime are therefore the safest forms of lime to apply.

On soils that are rich in humus, such as the peat and muck soils, the loss of humus will not be serious, and on such soils quick lime or hydrated lime may be used. Many soils in western Washington, in fact most upland soils, are deficient in humus, so that it would seem unwise to put anything on them that would burn out the small supply.

Lime will not take the place of manure or commercial fertilizers, nor will manure or commercial fertilizers take the place of lime.

If quick lime is to be used it may be applied in several different ways. The lump lime may be placed in small piles over the field, and slaked with a pail of water, or the lime piles may simply be covered with earth. In this way the lime will slake by drawing moisture. After the lime is slaked the piles of lime are scattered evenly over the ground. When applied in this way the application is usually made in the fall or during the winter. Lime in this form is caustic, so must be applied a considerable length of time before a crop is to be put on the land. After the lime is spread, it should be well incorporated with the soil by discing or harrowing.

Fertilizers are not effective on sour soil. If your soil is sour, sweeten it with Ground Lime Rock before applying fertilizers.

The quick lime is sometimes slaked and then applied. Considerable care is necessary to use just enough water so the lime crumbles into a fine state of division. It should not be allowed to burn, nor should too much water be used, as that makes it hard to handle. In this form it should be applied during the winter or very early spring. This form is caustic, and would injure a crop planted too soon after the lime is applied.

Finely divided quick lime is sometimes spread directly on the land. Applications of this kind should be made in the fall or winter. It should be borne in mind that all forms of quick lime are caustic. It is doubtful if this form should be used on a light soil. On a heavy clay soil, or a soil rich in humus, it may be profitably used, or if a soil is very strongly acid and it is desired to correct the acidity immediately this form of lime is desirable. After the acidity is once corrected it is perhaps advisable to use a safer form of lime, and in a smaller amount.

Hydrated lime can be secured commercially, and is in a finely divided state. Quick lime that is no longer fresh enough for building purposes is sometimes sold for hydrated lime. If air slaked lime is used, there will probably be some quick lime in it. The quick lime should be slaked before using.

Quick lime is easily converted into hydrated lime by slaking with water. It will sometimes be cheaper to buy quick lime and slake it at home, than to buy lime in any other form. Any form of hydrated lime is caustic, therefore it should be applied in the late fall to early spring, as a crop would be injured by it. It should be disced or harrowed to thoroughly incorporate it with the soil.

Ground lime rock, fully air slaked lime, ground shells, and such carbonaceous materials, can be obtained commercially, and at a reasonable figure. These forms of lime can safely be applied at any time, as they are not caustic and will not injure a growing crop or sprouting seeds.

Any of these forms, to give the best results, should be in a very fine state of division. Although it requires more of these than of the other forms of lime to be as effective, yet they can be used without danger of burning a crop or the humus in the soil. It may well be said that they embody the good qualities of the other forms of lime, but will not injure the soil or a crop. If more than necessary is used, there need be no fear of injury.

Experiments at the Illinois Experiment Station seem to indicate that two tons per acre of ground limestone usually give the highest returns. Subsequent applications of a ton per acre should be used whenever the soil begins to show signs of acidity. It is considered

good practice to apply one or two tons of carbonate of lime per acre every five or six years.

Any of the caustic forms of lime should not be applied with manure. The carbonate forms of lime, however, could safely be applied with manure, but it is seldom done. Manure should be plowed under, but any form of lime should be applied to the surface and thoroughly incorporated with the soil by discing or harrowing.

Lime can be applied broadcast, but is more easily applied with a fertilizer attachment or a fertilizer drill.

It should be remembered that the highest returns cannot be secured unless the fertility and humus supply of the soil is maintained.

Different crops are affected differently by liming. While some crops are benefited, some do not give any reaction one way or the other, and some are injured if there is too much lime present. The last are known as acid loving. The following classification of plants is taken from the report of work done by the Rhode Island Experiment Station, and bulletin No. 6 of the U. S. Dept. of Agriculture.

Plants usually benefited by lime applications are alfalfa, asparagus, beans, beets, barley, blue grass, cantaloupe, cherry, cabbage, clovers, cucumbers, cow pea, dandelion, egg plant, gooseberry, lettuce, onions, oats, parsnip, pepper, pea, peanut, plum, pumpkin, red raspberry, rhubarb, spinach, squash, tobacco, timothy, and wheat.

Plants indifferent to lime are apple, corn, cotton, carrot, millet, peach, pear, red top, Rhode Island bent grass, and rye.

Plants impaired by large amounts of lime in the soil are blue grass, blackberry, black raspberry, potato, radish, seradella, and watermelon.

Plants adapted to acid conditions are blueberry, buckwheat, carrot, corn, cranberry, hairy vetch, millet, cats, potato, raspberry, red top, rye, strawberry, and turnip. While these plants are adapted to acid conditions, some of them will be benefited by liming. It will be noticed that some of the plants in the last list are included in one of the other classifications.

Brief Points on Liming.

1. The different forms of lime contain different amounts of calcium.
2. To improve a poor, acid soil, plow under manure, apply lime and disc in, and grow legume crops in the rotation as much as possible.
3. Lime corrects acidity, but rarely acts as a true fertilizer.
4. Use burnt lime with caution.
5. Ground limestone and thoroughly air slaked lime are not injurious to soils or crops.
6. Lime is not a "cure all" for every soil ailment.

OREGON AGRICULTURAL EXPERIMENT STATION.

The Chas. H. Lilly Co., Seattle.

Gentlemen:—

Referring to your letter of April 14 will say that our examinations indicate that the soil deficiencies which are liable to occur in Western Oregon soils are a lack of organic matter, consequently a lack of nitrogen, and acidity. The acidity in some soils runs quite high. In other states it has been found a sound agricultural practice to add ground limestone for neutralizing acidity in soils. I think that this will have to be done in the western part of this state, if ground limestone can be obtained at a reasonable figure.

Yours truly,

H. V. Tartar, Chemist.

How and When to Apply Commercial Fertilizers

THE BEST METHOD and time for applying commercial fertilizers depends upon conditions and the kind of fertilizer used. They should be gotten into the ground in time to become dissolved and available when the young plants are ready to use the plant food.

Some of the slow acting fertilizers are best applied a considerable time before the seed is sown, and on heavy soils not liable to be washed by winter rains those fertilizers may be applied during the winter or fall prior to sowing the seed.

On light sandy or gravelly soils, from which some of the fertilizer might be washed by rains, it is best to apply them at the time of seeding, or a few days before.

The complete mixed fertilizers are usually best applied at the time of seeding or a short time before, but will often give excellent results if used as a top dressing after the plants are up. These fertilizers are composed of a variety of fertilizing ingredients, some of which are almost immediately available and others are slower acting and release the plant food only as fast as it is required by the plants.

Most of the nitrogen fertilizers are readily soluble, and should not be applied until the seed is sown, or used as a top dressing later. Nitrate of soda and nitrate of lime have produced best results when applied in several light applications at intervals of two or three weeks during the early growing season.

Commercial fertilizers may be sown broadcast evenly all over the field, and harrowed in before the seed is sown; they may be drilled in with a special fertilizer drill, either at the time the seed is sown or later; they may be scattered in the hills or drills where the seed is to be sown provided they are scattered evenly and thoroughly mixed with the soil; or they may be used as a top dressing after the seed is sown or after the plants are up, in which case rain and cultivation will work them into the soil. Any method that will distribute them evenly in the soil where the roots of the plants will reach them will be effective. In small operations they are sometimes applied by dissolving in water.

In any case they should be applied evenly and thoroughly mixed with the soil, so that no considerable quantity will come into direct contact with the seeds or roots.

When used for fruit trees, berry bushes, etc., they must, of course, be used as a top dressing, and may be sown broadcast or a small quantity may be distributed around each plant or tree, and cultivated into the soil.

An excellent way to use the potash fertilizers in conjunction with stable manure is to scatter a small quantity over the manure pile. In addition to adding potash to the manure, they help to retain the ammonia in the manure, greatly increasing the value.

When fertilizers are applied with a drill or in the hills or rows, it is well to mix them evenly with several times their bulk of mellow earth or dust, to insure even distribution.

The quantity of fertilizer to apply depends upon which fertilizer is used, and what crop it is used upon. Estimates of the quantities that will be advisable to use will be found elsewhere under the heads of the various fertilizers. The rule that "if a little is good, more will be better" does not always apply, for the plants can take up only a certain amount of plant food, and although a large part of what is left would be available the next season, some of it would probably be lost.

Feed your crops scientifically, the same as the modern dairyman feeds his cows. Study conditions, requirements and food values. Much can be gained by correct feeding; much can be lost by improper feeding.

Why Use Commercial Fertilizers

EVERY foot of your land has cost money, and should be made to pay dividends. The more productive it can be made, the greater will be the profits. It costs no more to plant, cultivate and harvest a full crop than a half crop.

As explained by Prof. Thatcher in the preceding pages, land, to be fertile, must contain an abundant supply of nitrogen, phosphoric acid, and potash in available form. Every crop removed from the land removes a certain amount of these elements, and if they are not replaced, the land is bound to become exhausted and unproductive. These elements may be returned to the land in the form of stable manure, but, except in the case of a few dairy farms where considerable feed is purchased, the farm does not produce enough to keep up the fertility of the farm. Every pound of produce sold from the farm contains some of these elements which have been removed from the soil.

If, to maintain the fertility of the farm, fertilizer must be bought, the commercial fertilizers are nearly always the most economical. In them can be purchased the exact elements to correctly balance the fertility in the soil, which cannot be done with stable manure for the reason that it contains far too much nitrogen in proportion to phosphoric acid and potash.

When stable manure is used, potash fertilizer should be used in conjunction with it, to balance the excess of nitrogen in the manure. If manure is used alone, the crops will use more phosphoric acid and potash than the manure replaces, and eventually the soil will produce an excess of stems and foliage at the expense of roots, fruit, or grain. By applying phosphoric acid and potash in the form of commercial fertilizers to balance the nitrogen in the manure, bumper crops will be produced indefinitely.

One hundred pounds of complete mixed fertilizer contains more plant food than a ton of stable manure, and contains the fertilizing elements in correct proportions. It is much more convenient and economical to handle and distribute, and is the cheapest and most effective fertilizer, especially for intensive farming.

LILLY'S

Market gardeners use commercial fertilizers in great quantities, and find them profitable.

LILLY'S CONCENTRATED FERTILIZER

A General Fertilizer

For Gardens, Lawns, Shrubbery, Roses, Flower Beds, House Plants, etc.

Guaranteed Analysis: Nitrogen 5%, Phosphoric Acid 11%.

This fertilizer is composed of the most suitable materials in the correct proportions for general purposes around the home. It is especially beneficial for flower gardens, house plants, shrubbery, rose bushes, etc. It contains a great variety of ingredients, some of which are quick acting and will produce noticeable results within a few days, while other ingredients are slow acting; the elements will be liberated only as fast as they are required by the plants, and the effect will be lasting. It is a real food for plants, not a stimulant that will produce wonderful temporary results, the after-effect of which is harmful. It will produce a healthy and luxuriant growth of plant and foliage, with larger, more perfect and brighter colored flowers.

Concentrated Fertilizer is also suitable for lawns, vegetable gardens and fruit trees when the amount required is small and it is inconvenient to procure the fertilizers especially prepared for those purposes. We would, of course,

recommend the special fertilizers when considerable quantities are required, for the ingredients and proportions are more suitable, but this fertilizer will produce good results for almost any fertilizing purpose, and cannot be in any way harmful if used in reasonable quantities.

It is clean, nice to handle and has no disagreeable odor. It is a fine, dry powder, and is easy to apply. It is usually applied dry, as a top-dressing, and raked into the soil. Before applying, the soil should be thoroughly cultivated and stirred; the fertilizer should then be scattered broadcast at the rate of one-half pound to one pound per square yard, and raked in. There would be no harm in heavier applications, but frequent light applications are preferable. The quantity and frequency of applications will depend upon the requirements of the soil.

If preferred, the fertilizer may be dissolved in water and applied with a sprinkling can. In all cases the soil should be kept thoroughly stirred.

Prices: 5 lbs., 25c; 25 lbs., 75c; 100 lbs., \$2.50; F. O. B. Seattle or Portland.

Packed in 5-lb. cartons, 25-lb. bags and 100-lb. bags only. 5-lb. cartons and 25-lb. bags may be shipped by parcel post, in which case a sufficient amount to pay postage must be remitted in addition to price.

There is neither pleasure nor profit in growing poor, weak, sickly plants or crops.

LILLY'S LAWN DRESSING

Orderless, Easy to Apply, Makes Luxuriant Rich Green Lawns

Continual mowing of lawns and removing the clippings soon exhausts the soil, and to maintain a good lawn it is necessary to renew the fertility at frequent intervals. The old method of fertilizing lawns with stable manure, so objectionable on account of unsightliness, disagreeable odors, tracking into the house, and, most important of all, the certainty of distributing noxious weed seeds in the lawn, is no longer necessary.

Lilly's Lawn Dressing is a clean, dry powder, easy to apply, and it is only necessary to scatter it broadcast over the lawn. A one hundred pound sack is a sufficient dressing for about twenty-five hundred square feet of old lawn, or for about one thousand square feet of new lawn, and contains more fertilizing elements than a ton of stable manure. It may be applied at any time, but if applied in summer, the lawn should be sprinkled immediately afterward. Several light applications during the summer will do wonders in keeping the lawn fresh and green.

It is practically odorless, entirely inoffensive in every way, and after the lawn is sprinkled is invisible. All will recognize the great advantage that this gives it over a top-dressing of stable manure.

One of its greatest advantages is its absolute freedom from weed seeds. A load of stable manure contains millions of weed seeds, with surrounding conditions ideal to make them spring into life and thrive. We all know how difficult it is to keep weeds out of the lawn even with the greatest care, for wind and birds scatter the seeds, but that is a small matter compared with the great quantities contained in manure. As Lilly's Lawn Dressing is made entirely from chemicals and animal matter, there is no chance for it to contain weed seeds.

Lilly's Lawn Dressing is also suitable for flower gardens, rose bushes and shrubbery. It is packed only in 25-lb. and 100-lb. bags. The 25-lb. bags may be shipped by parcel post, but in that case a sufficient amount must be remitted to pay postage.

Prices: 25 lbs., 75c; 100 lbs., \$2.50; F. O. B. Seattle or Portland.

Lilly's Lawn Grass Seeds and Lilly's Lawn Dressing are the reasons for the splendid lawns in Seattle and other cities of the Northwest.

LILLY'S

FRUIT, HOP AND VEGETABLE FERTILIZER

Increases Quantity and Size and Improves Quality and Color of
Fruits and Vegetables

Guaranteed Analysis; Nitrogen, 5%; Phosphoric Acid 10%.

For vegetable gardens, orchards, small fruits and for hops, Lilly's Fruit, Hop and Vegetable Fertilizer will give the best possible results. It is a strictly high grade, highly concentrated fertilizer, in the form of a dry powder, free from objectionable odor, and is composed of the most suitable materials in the correct proportion to be of the greatest benefit.

The materials composing commercial fertilizers are of the utmost importance, even more so than the analysis. It would be a simple matter to make a fertilizer analyzing 5% nitrogen and 10% phosphoric acid if that was our only object in view, but our fertilizers must contain the materials that will accomplish the desired results. There are many forms of nitrogen and phosphoric acid as used for fertilizing. For instance, the best form of phosphoric acid is that found in bone meal, and for that reason bone meal forms the base of our mixed fertilizers, but that form is slow-acting and we add phosphoric acid in other quicker acting forms, so that a part of the fertilizer will be available almost immediately while the balance will be available only as fast as it is required by the plants, and the benefit will be lasting.

One hundred pounds of Lilly's Fruit, Hop and Vegetable Fertilizer contains more fertilizing value than a ton of stable manure, and it is usually cheaper, especially when labor is considered. It is in no way offensive, and is easy to apply.

It does not contain any weed seeds. The greatest fault of stable manure is the great amount of weed seeds which it contains, and they are distributed under such conditions that they cannot fail to thrive.

This fertilizer may be applied in various manners, according to conditions. Probably the best method for applying on vegetable gardens is to sow it broadcast on the plowed ground and thoroughly harrow it in before the seed is sown. It may be more economical to scatter it in the hills or rows before the seed is sown, but in that case it should be thoroughly mixed with the soil so that the seed will not come into direct contact with any considerable quantity of the fertilizer. There are special drills for applying commercial fertilizers in the row at the time the seed is sown, or parallel with the row when the seed is sown or later. It may be applied after the seed is sown, or after the plants are up, but in that case the plants do not get the benefit of the fertilizer as early as would be beneficial. For orchards, hop fields, small fruits, etc., the fertilizer may be scattered around the trees or plants and mixed with the soil by cultivation. It may be applied at any time, but is most commonly applied early in spring. It is usually applied at the rate of five hundred to one thousand pounds per acre, but the amount should be governed by the nature of the crop and the requirements of the soil. Much larger quantities could be used without any harmful results.

Price; 25 lbs., 75c; 100 lbs., \$2.35; ton, \$42.00; F. O. B. Seattle or Portland.

It costs very little more to produce a full crop than a half crop, but the profits are much greater.

LILLY'S POTATO FERTILIZER

For Potatoes, Beets, Turnips, Carrots and All Other Root Crops

Guaranteed Analysis; Nitrogen 4%, Phosphoric Acid 10%

For all root crops such as potatoes, beets, mangels, carrots, turnips, rutabagas, etc., Lilly's Potato Fertilizer will be a profitable investment. A fertilizer for these crops must contain nitrogen in such forms that it will be available to give the plants a good start in the earlier stages of growth, but it must not be too effective in the advanced stages for it would tend to grow luxuriant tops at the expense of roots. It would be difficult to make a formula that would be more suitable for this purpose.

Being composed entirely of chemicals and animal matter, it contains no weed seeds, which are so abundant in stable manure; neither does it breed scab, as manure is very likely to do. On account of breeding scab, stable manure should never be applied directly on a crop of potatoes. If manure is used on potato land at all, it should be applied the previous year to some other crop.

This fertilizer may be applied by sowing it broad-

cast on the plowed ground, before the seed is planted and harrowing it into the soil. Probably the most economical method is to scatter it in the hills or rows before the seed is planted, but it must be thoroughly mixed with the soil so that no large amount of the fertilizer will come into direct contact with the seed. It is sometimes worked into the soil after the seed is planted, but best results are obtained by applying it before the seed is planted, so that it will become incorporated in the soil before being required by the young plants. Eight hundred to one thousand pounds will usually be sufficient for an acre, and will be equal in value to eight to ten tons of stable manure.

If the soil is sour, which is a common case in both bottom-land and up-land in Western Washington, no fertilizer will be effective until the soil is sweetened. In such cases Ground Lime Rock should be applied at the rate of a ton or more per acre, after which fertilizers may be used with good results.

Prices; 25 lbs., 75c; 100 lbs., \$2.00; ton, \$36.50. F. C. B. Seattle or Portland.

Ton prices will apply on lots of one-half ton or more of one kind of fertilizer.

LILLY'S

LILLY'S

NITRATE OF SODA

Guaranteed Analysis: Nitrogen 13%.

Nitrate of Soda is a very valuable fertilizer when correctly used. It is quick in action, the effect will be noticeable within a very few days, and for that reason it is best used as a top-dressing after the plants are up. If applied before the seed is sown, a part of it would be lost before the plants were ready to use it.

Best results are obtained by two or three light applications, about 150 lbs. per acre each, early in the growing season. If applied in larger quantities the excess above what the plants are able to utilize will be wasted. If applied too late in the season it is liable to cause excessive growth of tops and foliage at the expense of vegetables, fruit or grain.

Its greatest benefit is as a stimulant to give the plants a vigorous start early in the season, and when so used the final results are wonderful. The results of experiments with Nitrate of Soda on garden crops are given in U. S. Dept. of Agriculture Bulletin No. 162, extracts from which appear in our Crop Book. It is just as beneficial on farm crops such as corn, potatoes, etc. It is especially valuable on garden crops such as lettuce, radishes and celery, the quality of which depends upon being grown quickly.

It should be applied at the rate of two hundred to five hundred pounds per acre, preferably in several light applications at intervals of two or three weeks, and may be scattered around the plants, dry, and raked in or it may be dissolved in water. It should not be applied after the plants have neared maturity, for it will cause them to continue to grow, and retard maturity.

Price: Sack lots, 200 lbs., \$7.00; ton, \$70.00. Less than sack lots, 5c per lb.; 50 lbs. or more, 4c per lb.; F. O. B. Seattle or Portland.

LILLY'S

NITRATE OF LIME

Guaranteed Analysis: Nitrogen 13%.

Nitrate of Lime is another quick acting nitrogenous fertilizer, made by electrically combining nitrogen from the air with lime. It contains the same amount of Nitrogen as Nitrate of Soda, and the manner of using and benefits derived are the same. The article in the Crop Book in regard to the use of Nitrate of Soda on garden vegetables will also apply to Nitrate of Lime. We can furnish it only in full barrel lots, about 250 lbs., for the reason that after the barrel is opened it draws moisture.

Price: Barrel (about 250 lbs), \$7.75; ton, \$62.00; F. O. B. Seattle or Portland.

Land Plaster, or Gypsum

Land Plaster is not really a fertilizer, as it contains no plant food, but it causes a chemical change in the soil, releasing the potash which is already there in unavailable form, and is very beneficial to clover, alfalfa, peas, beans and other legumes. It is sown broadcast at the rate of one hundred to five hundred pounds per acre.

Price: 100-lb. sack, 80c; ton, \$12.00; F. O. B. Seattle or Portland.

Prices shown in this catalog are prices in effect at time of going to press, and are subject to change. For current prices see enclosed Supplement or later issues which will be mailed on request.

Potash Fertilizers

There is no Sulphate of Potash, Muriate of Potash, or Kainit to be had in this country at the time this catalog goes to press, and it is not likely that there will be any until the war is ended, as all Potash comes from Germany. If we are able to procure any of these fertilizers during the season they will be listed in supplements which we will be pleased to mail on request.

BONE MEAL

GUARANTEED ANALYSIS:

Nitrogen $2\frac{1}{2}$ to $3\frac{1}{2}\%$;

Phosphoric Acid 18 to 22%.

Bone Meal is a splendid fertilizer and for many purposes is the best and cheapest form of nitrogen and phosphoric acid. It forms the base of all the best mixed fertilizers. It is slow in action and there is no waste as the plant food is released only as fast as it can be taken up by the roots of the plants. It may be used in almost unlimited quantities without danger of burning the plants; neither is there any loss from leaching, and an ideal lawn or rose bed is made by mixing large quantities of Bone Meal with the soil.

It is also an excellent top-dressing for lawns, flower beds, etc., and is used extensively in greenhouses, hot-beds, nurseries, and for forming soil for potted plants.

Our Bone Meal is made from fresh bones that have not lost any of their value. It is a nice, clean product with no offensive odor. The amount to apply will depend upon the purpose for which it is to be used.

Price: 10 lbs., 30c; 100 lbs., \$2.00; ton, \$36.00; F. O. B. Seattle or Portland.

Dried Blood

GUARANTEED ANALYSIS:

Nitrogen 12%.

A very effective and quick acting form of nitrogen, generally used as a top-dressing. It must be used with care, but when properly used is a very valuable fertilizer. Like Nitrate of Soda, it is best used in several light applications. It is pure slaughter-house blood, dried and finely ground. Packed in 100-lb. sacks only.

Price: \$3.00 per 100 lbs.; \$56.00 per ton.

Fish Guano

GUARANTEED ANALYSIS:

Nitrogen 8%;

Phosphoric Acid 6%.

High in nitrogen and phosphoric acid in quickly available form, and will produce good results on any crop where a quick growth or a large growth of foliage is desired. It is splendid for lawns, but the odor is rather objectionable. It may be worked into the soil at the time the seed is planted, but as it is a quick acting fertilizer, it is more useful as a top-dressing. Applied at the rate of 500 to 1,000 lbs. per acre.

Price: 100 lbs., \$2.50; ton, \$47.50.

BLOOD AND BONE

GUARANTEED ANALYSIS:

Nitrogen 6%; Phosphoric Acid 10%.

An animal fertilizer rich in nitrogen and phosphoric acid and having additional value on account of a certain warmth and vitality which it imparts to the soil. It is a quick acting fertilizer, and for that reason it is for some purposes more valuable than Bone Meal, although the effect is not so lasting. It should not be applied a great length of time before the seed is planted, and is most useful as a top-dressing. It is usually applied at the rate of 500 to 1,000 lbs. per acre.

Price: 100 lbs., \$2.00; ton, \$36.00.

Superphosphate

GUARANTEED ANALYSIS:

Phosphoric Acid 17%.

This is what is known as Acid Phosphate, being phosphate rock treated with acid to make the phosphoric acid available. While the phosphoric acid in this is not so valuable as that in Bone Meal, it is more quickly available and in some cases more useful.

Superphosphate is recommended as a top-dressing for grass lands and for grains. It is generally used at the rate of 500 to 1,000 lbs. per acre. Packed in 125-lb. sacks.

Price: Per sack, 125 lbs., \$1.75; ton, \$26.00.

Phosphate Rock

This is raw phosphate rock finely ground. It is slower acting than Superphosphate, and by some manufacturers is recommended as the most economical form of phosphoric acid.

Price: 100 lbs., \$1.25; ton, \$22.50.

Ground Lime Rock

This is the best form of lime for sweetening sour soil. It is fully as effective as air-slaked lime, does not burn the humus in the soil, is more convenient and is less expensive. In preceding pages is an article, "Lime for Correcting Acidity in the Soil", written by Prof. Stookey, of the Washington State Agricultural Experiment Station.

A large proportion of the land west of the Cascade Mountains is sour, and until the acid is neutralized with lime, fertilizers will be of little benefit. For ordinary cases, a ton of Ground Lime Rock per acre will be sufficient; in case of extreme acidity larger quantities will be required. Packed in 200-lb. sacks only.

Price: Per 200-lb. sack, \$1.40; ton, \$10.50.

The Standard Inoculation

FARMOGERM

High-Bred Nitrogen Gathering Bacteria.

**Supplies the Necessary Bacteria to Grow
CLOVER, ALFALFA, PEAS, BEANS, VETCH
AND OTHER LEGUMES**

IF YOUR SOIL will not produce good crops of any of the legumes, it is probably on account of the absence of the nitrogen-gathering bacteria necessary for the production of leguminous plants, such as the clovers, alfalfa, peas, vetch, beans, etc. If the bacteria is in the soil in sufficient quantities there will be found on the roots of the plants small lumps or swellings like those shown in accompanying cut of vetch root. These lumps are nitrogen-gathering nodules, and contain nitrogen which, in addition to producing a bumper crop, makes the legumes such splendid fertilizers for future crops. If the bacteria are not present in the soil, Farmogerm will supply them.

What Farmogerm Is

Farmogerm is a pure culture, or growth of nitrogen-fixing bacteria that have been selected and bred up to transform large amounts of nitrogen from the air into soluble nitrates. These bacteria are grown in a jelly, or food, in which they remain active for long periods of time, and sent out in a bottle which admits the necessary supply of pure air, yet keeps out destructive contaminations.

What Farmogerm Will Do

Unless the soil is very acid or wet, Farmogerm will:—

1. Increase the yield and quality of legume crops, giving quicker growth and earlier maturity.
2. Increase the food value of legumes.
3. Make legumes grow in new localities where they cannot otherwise be grown successfully.
4. Supply nitrates to other crops growing with the inoculated legume crop.
5. Enrich the soil for future crops.

Increased crops are a well established certainty in all instances where inoculations are used together with proper culture methods. Not only is the crop increased in weight, but in its richness.

Fertilizer values of well inoculated legumes are well known. A crop of peas, vetch, clover, alfalfa or cow peas, either harvested or plowed under, distributes a great amount of nitrogen in the soil, and is equal or superior to a heavy application of manure.

Inoculation of legume seeds with Farmogerm is a simple process; no fuss; no bother. Just moisten the seed with Farmogerm, pure cultures, allow them to dry, then plant. Seeds for twenty acres can be treated in a few minutes, and the results will surprise you.

Those who have tried to grow alfalfa, and failed, will probably be able to get a good stand by the use of Farmogerm.

When planting any legume, unless you have proved that you can grow record-breaking crops without it, it will pay to insure the crop by inoculating the seed with Farmogerm. It is cheap insurance.

Farmogerm is beneficial to legume crops only. We can furnish it for Alfalfa, Red Clover, Alsike Clover, White Clover, Sweet or Bokhara Clover, Garden Peas, Field Peas, Sweet Peas, Cow Peas, Beans and Vetch. Farmogerm for one of these crops would be of no use for any other.

When ordering, be sure to state which legume the Farmogerm is to be used for.

PRICES

One Hundred Acre Size.....	\$100.00
Fifty Acre Size.....	55.00
Five Acre Size.....	6.00
One Acre Size.....	2.00
One-Quarter Acre Size.....	.50

Postpaid.

The large sizes are not carried in stock, and we should be allowed time to get them.

Write for pamphlets describing Farmogerm, its uses and benefits.

PRACTICAL POULTRY BOOKS

Successful Poultry Keeping

A valuable book for all interested in poultry. It covers every branch of the industry: Starting in the Business, The Poultry Plant, Breeds, Incubating and Brooding, Chick Growing, Roasters, Broilers, Capons, Market Poultry, Eggs, Turkeys, Ducks, Geese, and Prevention of Diseases. 176 pages, 9x12 inches, paper, illustrated.

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Price, 50c, postpaid.

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A reliable guide to success in raising chicks, both by natural and artificial means. It gives the experience of successful poultry raisers, and covers all stages of chick raising. 80 pages, 9x12 inches, illustrated.

Price, 50c, postpaid.

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The American Standard of Perfection is published by the American Poultry Association and is the American authority on the required characteristics of all breeds and varieties of chickens, ducks, turkeys and geese. It also contains the rules under which the A. P. A. shows are held. Cloth bound. Illustrated.

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Tells how to mate, breed, feed and care for all breeds of these popular and dainty little fowls. 68 pages, 9x12 inches, illustrated.

Even the experienced poultryman gains many new ideas by reading the experience of others.

LILLY'S POULTRY SUPPLIES

Foods Which Produce Results, Utensils Which Are Practical.

TO THE POULTRYMEN of the Pacific Coast we wish to extend special greeting. You have had a rather bad season, compared with other seasons, and some have dropped out of the poultry business, or reduced their stock, but, as this reduction is bound to cause a shortage, we predict an unusual demand and consequent high prices during the coming season.

However, we believe that the complaint in regard to hard times in the poultry business is to some extent imaginary. Even under conditions prevailing during the past season, there is a good substantial profit to be made in the business when handled in a business-like manner.

We are vitally interested in the poultrymen and

their welfare, for their interests are our interests. We believe that we are deserving of a great deal of credit for the advancement of the poultry industry in this section, for we have done everything possible to help and encourage it. Of course, our motive was not entirely unselfish, but we believe that the success of many poultrymen is due to our assistance, advice, and above all to the results obtained from the use of the correctly balanced rations which we provide for various purposes.

Poultry supplies are not a side issue with us, or an adjunct for the purpose of using waste materials or by-products. Our Poultry Supply Department is one of our most important departments, and it is to our interest to serve you, and to serve you well.

The success of Lilly's Poultry Foods proves the value of special foods for special purposes.

Brooding and Feeding of Chicks

Proper Care and Food Will Avoid Losses

BEFORE the chicks are expected to hatch, it should be known positively that the brooder is in perfect working order; and it should be heated up the day before the chicks are to be placed in it.

A good litter of about one inch of chaff, alfalfa meal, or chopped straw should be scattered over the floors of both the brooding and exercising compartments, to make a warm place for the chicks to brood and scratch in. Some chick grit should be scattered in the litter where they will find it.

The chicks should be left in the incubator until they are thirty-six to forty-eight hours old, when, if the brooder is heated up and is running properly, they may be moved to the brooder. The best time to move them is in the forenoon, which will allow the operator to watch them during the day, and be sure that the brooder is running perfectly before he retires for the night.

The temperature under the hover should be kept at about ninety-five degrees at first, gradually decreasing to ninety degrees at the end of the first week, eighty degrees the third week, seventy-five degrees the fourth week, and so on until, before the chicks are ready to be removed from the brooder, no heat is supplied. This refers to the temperature under the hover; in the outer chamber it will of course be lower. The temperature should be kept a little higher at night than during the day.

Many poultry raisers do not use thermometers in their brooders; depending upon the actions of the chicks to indicate whether they are too warm or too cold. The watchful poultryman will soon learn to determine the distress signals of the chicks. The language of the little fellows is equally as indicative of their condition as is that of a child. The happy, peeping sound that they make when all is well is quite different from the sound made when they are too hot, too cold, hungry, or have lost their mother (or foster mother). Observation plays a large part in the successful raising of chicks.

Little chicks are babies in the chicken world, and, although not so helpless as human babies, they should be treated as tender infants. Only those who love and are interested in each individual chick can hope to be successful in raising them.

There are three main causes for failure in raising chicks after they have been properly hatched; viz., over-heating, over-cooling, and improper feeding. Over-heating is probably responsible for the greatest mortality among brooder chicks. Serious loss is often caused by the chicks piling on top of each other in the corners, on account of being cold, or faulty construction of the brooder. Chicks at the bottom of the pile will be either killed or so weakened that they would better be dead.

Feeding is responsible for a great deal of mortality or stunted chicks, but not nearly so much as formerly, as wet mash, bread crumbs, hard-boiled eggs, or a diet of cornmeal only, are

seldom used now. With a properly balanced ration, properly served, loss from this source will be very slight.

Chicks should not be fed or watered for thirty-six to forty-eight hours after being hatched. Nature has provided for them for that time. After placing them in the brooder a mixed grain chick feed should be served, in a chick server or a shallow dish, in the brood chamber. After a day or two this food should be scattered in the litter in the exercising compartment, where they will scratch for it, giving them necessary exercise. At first, this food should be fed five or six times per day, gradually reducing the number of feeds and increasing the quantity as they grow older.

At the same time, a chick server filled with a dry chick mash should be kept before them all the time. Great care should be taken that this mash is properly balanced and contains the correct ingredients. A large proportion of bran should be avoided, as it is too irritating. This mash may be moistened if desired, but should never be made wet; just moist enough to be crumbly when pressed in the hand.

In addition to these, plenty of clean, fresh water; fine chick grit; and green food such as lettuce, cabbage, etc., should be placed where the chicks can have access to them at all times.

This manner of feeding should be continued until the chicks are about six weeks old, when they should be fed as suggested under the head of "Developing Growing Chicks."

Chick Food

The Secret of Raising Good Chicks is Correct Feeding

IN CHOOSING a ration for baby chicks, we must remember that they are infants and that their digestive organs are extremely delicate. We cannot expect them to thrive upon foods which are unsuitable. The food must be easily digested, must not contain anything that will be irritating, and must contain the correct elements to build bone, muscle, blood and feathers without forcing or fattening.

With modern methods of raising chicks in large numbers it is quite essential that the manner of feeding be simplified to reduce labor and expense. To accomplish this, poultrymen have generally adopted mash foods in connection with grain foods. Mash foods are excellent, provided a grain scratching food is also supplied; that the mash does not contain a large proportion of bran or other irritating material, and that it is properly balanced and is composed of the correct ingredients to promote healthy growth of chicks.

Lilly's Holly Chick Food and Lilly's High Protein Chick Mash are prepared with these facts uppermost in mind. They are intended to be fed in conjunction, and the combination, with the addition of succulent green food, chick size Crystal Grit, and plenty of fresh water, makes a complete balanced ration properly constituted to produce best results in

developing young chicks. No other suitable ration can be more convenient or economical. No preparation is necessary; no mixing, cooking or muzzing; and no other foods except those mentioned should be supplied.

Holly Chick Food is the grain portion of the ration. Until the chicks learn to hunt for it, it should be fed in a shallow dish; later it should be scattered in a litter where they will scratch for it like their little lives depend upon finding every particle. It should be fed three or four times a day. The quantity will depend upon how much they will eat. They should have all that they will eat up clean.

High Protein Chick Mash is usually fed dry in a hopper or trough placed where the chicks will have access to it at all times during the day. If desired, it may be moistened slightly with water or milk, but should be moistened only enough to make it crumbly. It must not be wet or sticky, and must not become sour.

These foods should be supplied from the time the chicks are first fed, when they are thirty-six to forty-eight hours old, until they are five or six weeks old, when they should be changed to Growing Food and Growing Mash.

The Test of Time and Results Prove its Worth

Holly Chick Food is favorably known by poultrymen all over the Pacific Coast. It is the original dry grain chick food, the foundation of our success in manufacturing mixed poultry foods, and the standard with which other chick foods are compared.

It is composed of a great variety of sound grains and seeds cut to the correct size for little chicks, and contains the correct elements in the right proportions to form an ideal complete ration when fed in conjunction with High Protein Chick Mash.

Lilly's Poultry Foods are for sale by dealers or by us direct.

Prices (subject to change):

5 lbs.	-----	\$0.25
10 lbs.	-----	.40
25 lbs.	-----	.90
50 lbs.	-----	1.60
100 lbs.	-----	3.00

F. O. B. Seattle or Portland.

HIGH PROTEIN CHICK MASH

An Ideal Meal Food for Chicks

High Protein Chick Mash is carefully prepared from suitable ground grains and animal matter correctly balanced for the requirements of tender baby chicks. This and Holly Chick Food form a complete ration, including meat food, upon which chicks thrive and make a sturdy and healthy growth.

It is not only the most suitable food for chicks; it is also the most convenient and a great labor-saver. It is only necessary to fill the hopper occasionally and the chicks will help themselves liberally, but will not eat too much if green food is supplied.

Prices (Subject to change) 10 lbs., 35c; 25 lbs., 75c; 100 lbs., \$2.50. F. O. B. Seattle or Portland.

Developing the Chicks

Their Future Depends upon Vigorous and Continuous Growth

GREAT DAMAGE is often done to chicks at the time they are moved from the brooder to the growing house. Although artificial heat may have been entirely removed from the brooder, it will be understood that, on account of the small space, the heat from the bodies of the chicks will make it much warmer than the larger house to which they are to be removed.

The time that the chicks are to be removed from the brooder will vary according to the season. During the early spring it is often necessary to supply a little heat until the youngsters are eight or nine weeks old; while later in the season five weeks may be ample for them to remain in the brooder.

It is best to move the chicks to their new quarters at night. It is not to be expected that they will learn to go onto the roosts immediately, and they should be watched carefully for a time, for it will require considerable patience and ingenuity to keep them from piling up in a corner and crushing the life out of the weaker ones. It will be well to remember that the chicks have a reason for crowding on top of each other; they are cold, and wish to get warm; it is not pure cussedness, as is supposed by some. Just imagine yourself, after being accustomed to a warm bed, being turned out into a big barn without protection or warmth.

The growing house should be built so that the youngsters can gradually adapt themselves to the roosts, which they will do in a surprisingly short time if conditions are congenial. A good method is to place the roosts near the floor, filling in under the roosts with a coarse litter, which is gradually removed, and the roosts gradually raised as the birds become accustomed to them.

Growing stock should be fed a slightly higher protein diet than is required by younger chicks, for the bone, muscle, feathers and blood all draw from this source. Growing mash should be their constant diet, kept before them where they can help themselves at all times. This is best fed in a hopper, dry, but it may be varied by moistening it just enough to make it crumbly, if desired. In addition to the mash, the regular growing food

(grain) should be scattered in the litter three times each day, in such a manner that they will have to scratch for it. Abundant exercise is of the greatest importance.

Bone, grit, and charcoal should be supplied, preferably in a hopper, or other receptacle that will keep them clean and prevent waste, and where the chicks can help themselves at any time. They should also be supplied with an abundance of green food and clean water.

If convenient to do so, the sexes may be separated as soon as they are sufficiently developed to distinguish. We do not, however, advocate the separation of the cockerels and pullets unless both can have plenty of range. It is not fair to the future breeders to shut them up in close quarters while the pullets have all the range. One of the greatest causes of sterility in breeders is the close penning of young males.

Young growing stock must have plenty of air-space in which to roost. Watch for lice, and see that they are never admitted. Clean the house regularly and frequently; use plenty of whitewash and lice killer; lice are the poultryman's most deadly enemy.

Do not crowd young stock. Give them plenty of range outdoors and plenty of room in the house, with all the sunlight and fresh air that can be had. Fresh air never killed anything if applied correctly, draughts are a different matter, and the greatest care must be taken that none exist.

Feed liberally. Chicks cannot develop properly if fed only enough to exist upon. There is no danger of over-feeding if they have plenty of range and green food; if closely confined more care must be exercised, and troubles are multiplied, but they should not be closely confined.

Keep the birds growing steadily. Any set-back will do damage from which they will never entirely recover.

Cull out all weak, deformed, and undesirable chicks; cull closely, cull now, and keep on culling. In other words, keep only the best. Poor stock is not worth raising.

Growing Food

Correct Food to Produce Big, Husky Chicks Quickly

A CRITICAL time in the life of a chick begins when they are five or six weeks old, and care must be taken that there is no check in their growth at this time. They have outgrown Chick Food, and it is no longer a profitable feed, but they are not old enough for an adult ration.

It is for this stage that we have Lilly's Growing Food and Lilly's High Protein Growing Mash, which are to be fed in conjunction, and will produce broilers or laying pullets in the least possible time and at minimum expense. Practical poultrymen know the importance of this, and that their profits depend upon it.

The Growing Mash is a meal food and is to be kept where the chicks can help themselves at any time during the day. It may be fed either dry, in a hopper, or slightly moistened, just enough to make it crumbly, never wet enough to make it sticky. This combination contains all of the animal matter and other elements necessary or beneficial for growth of chickens, with the exception of grit, green food and water. This diet should be continued until the broilers are marketed and the pullets are ready to be transferred to the laying quarters, when it should be changed to Scratch Food and Egg Mash.

GROWING FOOD

A Grain Food to Force Activity and Exercise

Lilly's Growing Food is a mixed scratching ration composed of the proper grains and seeds in the correct proportions to be converted into bone and flesh in the shortest possible time, and consequently with the least expense.

When scattered in the litter the growing chicks will scratch for it eagerly, and that exercise, together with plenty of green food precludes the possibility of overfeeding, as all that they will eat will be completely digested. The more they eat, the quicker and greater the profits.

Lilly's Growing Food is to be fed in conjunction with Lilly's High Protein Growing Mash, and the combination forms a complete ration with the exception of green food, grit and water. If the Growing Mash is not fed, meat food in some form should be supplied.

To cockrels which are to be marketed for broilers, Lilly's Fattening Food should be supplied, after they have been separated from the pullets, instead of the Growing Mash.

For sale by dealers or will be supplied directly by us.

Prices: (Subject to change) 10 lbs., 35c; 25 lbs. 75c; 100 lbs., \$2.50; ton, \$48.00;
F. O. B. Seattle or Portland.

HIGH PROTEIN GROWING MASH

A Meal Food for Healthy Growth

Modern methods of poultry keeping demand dry mashes. They are not only great labor savers, and the most economical method of feeding, but also make it easier to obtain a correctly balanced ration and they supply a needed variety of foods. We would not recommend feeding a meal food alone, but it is highly advantageous when fed in conjunction with a scratching food.

Lilly's High Protein Growing Mash is carefully prepared from ground grains and seeds with the correct ratio of protein and carbohydrates when fed as a companion feed with Lilly's Growing Food and the addition of green food, grit and water to form a complete ration to produce a sturdy and rapid growth without forcing.

It should be kept where the chicks will have access to it at all times. It is usually fed dry in a hopper, but may be moistened if preferred. This ration should be continued until the pullets are ready to begin laying.

Prices (Subject to change) 10 lbs., 35c; 25 lbs., 70c; 100 lbs., \$2.35; ton, \$44.00;
F. O. B. Seattle or Portland.

No one food can produce various results economically. We make a food for every purpose.

Feeding for Profits

Correct and Economical Feeding is Essential for Success

THE IMPORTANCE of correct feeding impresses itself upon us more and more as we come in contact with the varying successes and failures among poultry keepers. All will admit the importance of selection for the building up of a high standard of perfection of all stock, but the whole system of selection avails nothing unless the feeding and care be on a par with the selection.

When we study the effects of breeding of domestic animals during the last century, we find that the most noticeable feature in their development has been their increased capacity for assimilation of food. This has made the wonderful present-day hog, the modern horse, cows with astonishing milk yields, and the two-hundred-egg hen. The best of this high bred stock will quickly deteriorate to the meekest scrubs if improperly fed and cared for.

The changes that have taken place in the various breeds of domestic poultry are truly wonderful, and this high state of perfection is depending upon three factors—selection, care, and feeding. The breeders profits are great or small in proportion to his understanding and practice in the science of feeding.

It is of the utmost importance that the foods be suitable for the purposes for which they are needed. If egg production is the object in view, it is necessary to feed those foods that are high in protein to give maximum results. If for growing of young birds, it will require a food well balanced in all departments to provide for the growth and development of the growing stock. If fattening be the object, those foods containing a high proportion of fat producing elements will be the most economical and give the best results.

It is necessary to make a study of the analysis of food products to be able to determine what foods are most suitable for various purposes, and will produce best results most economically. Until this knowledge is attained, undoubtedly the best method is to purchase foods ready mixed for specific purposes from a reliable manufacturer who makes a specialty of such foods.

There, perhaps, was a time when there was more or less risk in buying mixed foodstuffs, but in these days of scientific feeding, the manufacturers realize the necessity of making foods that produce satisfactory results, for a business is short lived that sells an article that fails to do what is claimed for it.

Chick Foods, Growing Foods, Scratch Foods, Egg Foods, and Fattening Foods made by a manufacturer who has made a study of foods, has made a reputation on them, and has that reputation to maintain, will produce satisfactory results, and at a cost that cannot be lowered by buying the separate ingredients and mixing them at home.

Do not buy foods containing grit and shell. Those articles should be purchased separately, for you cannot afford to pay grain and meat prices for them. Always consider the weight of sacks of food purchased. While it is improbable that any manufacturer would dare to give less than the weight branded on the sacks, some pack foods in sacks containing 75 lbs. or 90 lbs., and although the sacks are branded accordingly, many fail to comprehend that 100 lbs. of food is cheaper at \$2.25 than 75 lbs. at \$1.70, or 90 lbs. at \$2.05.

Always provide an abundance of green food; it is not only highly essential, but is also the cheapest kind of food. Kale, cabbage, lettuce, etc., are excellent green foods.

Never feed scratch food on the bare floor or ground, especially if wet or dirty. It should always be fed in a litter, where the birds will have to scratch industriously for it. They need the exercise.

Mash foods, either wet or dry, should always be fed in hoppers, so that they cannot become dirty or be wasted. The same applies to grit, shell, bone, charcoal, meat scrap, etc.

Feed liberally; all that the birds will eat up clean. They cannot produce good results on only enough food to keep them alive.

Grain Food for Poultry

A Grain Scratching Food is Essential to Promote Activity

WHHEAT is a good food for poultry, so also is corn, oats, rye, buckwheat, kafir corn, sunflower, millet, etc., but no one of them will give good results if fed exclusively. No one grain is correctly balanced to supply all that is required by a laying hen without supplying some element in excess. Best results are obtained by feeding a variety of grains in the right proportions; and even then supplementary meat and high protein foods are necessary to form properly balanced rations.

Poultry needs variety and exercise as much as humans do. A mixed grain ration supplies variety, and, by being fed in a deep litter, furnishes exercise. A busy hen is a happy hen; and no music is sweeter to the ear of a poultryman than the song of a hen, for it indicates profits.

The only practical way to make a hen active is to make her scratch for her living. Lilly's Scratch Food, as its name implies, is made for that purpose. When it is scattered in a litter the hens will scratch for it industriously until the last grain is found.

The litter should consist of straw, hay, chaff, leaves or other suitable material, and should be deep enough to make the hens considerable work. It should be in a clean, dry place, and should be changed often enough to keep it clean.

Scratch Food is usually fed once each day, late in the afternoon, early enough for the hens to find all of it before dark. They should have all that they will eat, but there should be none left.

Scratch Food alone is not a complete ration. It is intended to be fed in conjunction with High Protein Egg Mash or Common Sense Egg Food. It is also necessary to supply green food, grit, shell and water. This combination forms a complete ration.

LILLY'S SCRATCH FOOD

The Standard Grain Ration for Poultry

Lilly's Scratch Food is the original scratch food. We have been making it a dozen years, during which time it has gained a reputation which we cannot afford to lose.

Some scratch foods are made of inferior grains, screenings and mill waste, without regard to food value or forming a balanced ration. Lilly's Scratch Food is made of good grains in correct proportions; not such grains as we happen to have in stock and cannot use for other purposes, or grains that happen to be cheapest, but good sound grains best suited for the purpose.

It contains no grit, shell, or other cheap material which can be purchased and fed separately more economically; neither does it contain any waste material. It is all food, and good food.

Prices (subject to change): 10 lbs., 35c; 25 lbs., 65c; 100 lbs., \$2.25; ton, \$43.00. F. O. B. Seattle or Portland.

LILLY'S CACKLE FOOD

A Scratch Food to Reduce the High Cost of Living

This is a scratch food made to meet the demands of some poultrymen for a cheaper food. The price of wheat and some other grains has been extremely high, and, as we refuse to cheapen Lilly's Scratch Food by changing the formula, we are making a

grain food which can be varied with conditions.

The ingredients are not always the same, but it is always composed of grains which are suitable for poultry food, and those grains are always sound and sweet. Packed in 100-lb. sacks only.

Prices (subject to change): 100 lbs., \$2.00; ton, \$37.00. F. O. B. Seattle or Portland.

Lilly's Poultry Foods are for sale by dealers or will be supplied by us direct.

Egg Production

The Main Source of Profits

THE utility poultryman's success depends to a very great extent upon his ability to produce eggs during the season when the price is high; for it is upon eggs that he must depend mainly for his profits. This condition applies more or less in all localities, but decidedly so on the Pacific Coast.

In the western portions of Oregon, Washington, and British Columbia, the greatest handicap to the poultry business is the excess of dampness during the winter and early spring months. This condition, however, is not nearly so serious as is often supposed, and becomes less a factor as we more fully understand the question of correct housing and feeding to overcome it.

One of the essentials for good egg production during these months is a good, dry, scratching-house, located in a position free from rigorous exposure and well drained, so that the floor will not be damp and cold. A healthy flock of hens housed under these conditions, can, when fed correctly, be depended upon to produce a good supply of eggs.

The value of a deep scratching litter, especially during the months when the hens are more or less closely confined, cannot be over-emphasized; and the scratching-house should be so arranged as to get the benefit of all the sunlight that is to be had during the winter months.

A popular and successful method of feeding, one that has been fully tested by time and practice, is the feeding of a dry mash in some form of hopper or receptacle to which the hens have free access at all times. This mash should consist of various ground foods and a liberal amount of animal protein to form a balanced ration.

In addition to the mash food, a regular diet of mixed grains should be scattered in the scratching litter, where the hens will have to scratch industriously to find it. This food should never be scattered on the bare floor or ground, especially if wet or dirty, and even if fed in hoppers its usefulness would be lessened, for the hens need the exercise. Exercise and employment makes healthy, contented flocks; and such flocks produce eggs.

The hens should have free access to hoppers containing granulated charcoal, granite grit, and granulated oyster or clam shell. They must also be supplied with plenty of green food, and, above all, an abundance of clean, fresh water. These are not only cheap food, but are highly important and absolutely necessary for health and egg production.

The foregoing is not the only way to feed poultry, but it is, taking everything into consideration, the

most satisfactory. Some feed a moistened mash in preference to the dry mash; enabling them to mix with it kitchen scraps and any other materials that may be available. There is room for considerable latitude in the feeding of poultry. The main objects should be to supply such foods as will produce desired results, and keep the birds occupied the greater part of the day, keeping them healthy, contented, and not giving them leisure to contract vices.

Do not over-feed, but feed plenty to sustain life and produce eggs. Hens cannot produce eggs unless supplied with the necessary materials.

Make it a point to be quiet and gentle among the layers; encourage them to be friendly. Do not allow strange dogs, or even strange people, to have access to the yards and houses.

The poultryman who depends entirely upon poultry literature for his knowledge of feeding, housing and other matters pertaining to poultry, is very likely to become confused. There is a great diversity of ideas among authors of poultry literature, and too many of them are not practical poultrymen. Great confusion is liable to occur on account of difference in conditions and localities. Methods and practices which are entirely practical in the eastern states may not be practical on the Pacific Coast. Climatic conditions are quite different, making a different system of housing necessary. Many of the foods recommended by eastern writers are out of the question here; on account of not being produced in the west, the price makes them unpractical. Usually the foods most available in our immediate vicinity are the most practical.

Most poultrymen could grow a large part of the food necessary for their flocks. The really successful farmer never buys anything that can be produced at home reasonably. It may not be practical to grow corn, or even wheat, here on the coast, but oats, peas, etc., as well as green food such as kale may be grown as in no other locality. Feeding, and other practices, should be made to conform to local conditions.

Egg Producing Food

Profitable Egg Production Depends Upon Correct Feeding

BREEDING and selection have done much to increase egg production, but feeding does more.

No hen, regardless of how well bred, of what strain or what breed, ever produced a great egg yield on an insufficient or unsuitable diet. A hen is an egg factory, and to manufacture eggs she must be supplied with suitable materials in sufficient quantities.

This is our object in furnishing special foods for various purposes. A food that is excellent for one purpose may have little value for another purpose. Chick Food, Growing Food or Fattening Food would not produce eggs satisfactorily, for they do not contain the correct elements in the right proportions for that purpose. They are made for other purposes.

We make two brands of egg food; one being the old original Common Sense Egg Food which has been the staple mash food among poultrymen for many years. It is in every way excellent for general feeding, for breeding pens, and for normal egg yield.

The other is High Protein Egg Mash, which is intended for those who make a specialty of market eggs, and wish to get the maximum number of eggs which their hens are capable of producing.

Both of these mash foods are intended to be fed in conjunction with Lilly's Scratch Food. Neither of them alone is a complete ration; but either of them combined with Scratch Food, green food, grit, shell and water forms a complete balanced ration, supplying all of the elements necessary or beneficial for producing eggs and at the same time keeping the fowls in perfect health and the best of condition.

They are generally fed dry in hoppers placed where the hens will have access to them at all times during the day. If supplied with the other foods named they will not eat more than is beneficial.

It may be better, although more labor, to moisten the mashes with water or milk, and scraps from the kitchen may be mixed with them. Splendid results are obtained by mixing them with Alfalfa Leaves and Blossoms which have been scalded with boiling water, covered and allowed to steam.

LILLY'S HIGH PROTIEEN EGG MASH For Maximum Egg Production

Lilly's High Protein Egg Mash supplies the demand for a food to produce eggs in abundance. It is the limit in protein content, the ratio being 1 to 3.4. It contains no condiments or other harmful ingredients, but is extremely high in animal foods. It is intended strictly as an egg producer.

It is intended to be fed in conjunction with Scratch Food, and the combination together with green food, grit, shell and water forms a complete ration. No additional meat scraps or other meat food should be fed, for this mash contains sufficient.

Prices (subject to change): 10 lbs., 35c; 25 lbs., 70c; 100 lbs., \$2.30; ton, \$43.00. F. O. B. Seattle or Portland.

COMMON SENSE EGG FOOD

A Mash Food for Breeders and Layers

Lilly's Common Sense Egg Food is a dry mash food composed of ground grains and animal matter in the correct proportions to supply the material to make muscle, feathers and eggs.

It is not a forcing food, but will produce a normal egg yield, and is ideal for breeding stock, producing eggs from which strong, vigorous chicks may be hatched.

It contains sufficient meat food, and combined with Scratch Food, grit, shell, green food and water forms a complete ration.

Packed in 100-lb. sacks only.

Prices (subject to change): 100 lbs., \$2.10; ton, \$39.00. F. O. B. Seattle or Portland.

Preparing Poultry for Market

A Feature that is Neglected in the Northwest

THERE is a general opinion among poultrymen that it does not pay to produce fine table poultry in this part of the country; but that is only partly true. We would not advise entering upon a strictly market poultry business, but every utility poultryman has young cockerels and old hens to dispose of, and instead of considering these merely a by-product they should be made to produce profits.

At least two weeks before the birds are to be marketed they should be confined in crates or pens where exercise will be very limited. The food which they have been accustomed to should be gradually changed to a fattening food, and the quantity increased until they are getting all that they will eat. Food converted to meat in this manner brings a big profit, and the more they can be induced to consume the greater the profit.

Food that is ideal for growth of bone and muscle, or production of eggs, is not at all satisfactory as a fattening and finishing diet. The fattening food should consist of a variety of grains of a carbonaceous nature, mixed, and ground to a fine meal. This meal should be made into a soft mash; mixed with butter-milk if available, otherwise water will do.

The fattening food should be fed three times each day, and the birds should be supplied with green

food, grit and an abundance of fresh water. See that they have plenty of fresh air and that the houses are free from lice. Within two or three weeks the birds should gain about twenty-five per cent in weight, and on account of better quality will bring a better price per pound.

If the birds are to be marketed alive, ship them in clean, attractive crates with straw or chaff in the bottom, and get them to market as quickly as possible.

If they are to be shipped dressed, stop feeding one day before killing, but continue to supply water.

The best method of killing is by sticking in the roof of the mouth. All poultry should be dry picked, as they make a better appearance and bring better prices.

If the birds are for retail customers, to be used within a few days, we would recommend that they be drawn and head and legs removed, ready for roasting, similar to the picture at the top of this page.

If they are for cold storage, they should be dry picked only, not drawn, and there should not be a break or cut in the body or skin except the small cut in roof of mouth.

To those desiring more information on this subject we would recommend the book "Profitable Poultry Keeping," listed in last pages of this catalog.

LILLY'S FATTENING FOOD

Converts Into Meat Quickly and Profitably

Lilly's Fattening Food is a mash food consisting of the correct materials in the right proportions to produce the greatest amount of flesh in the shortest possible time, and at the same time keep the birds in perfect health.

It is to be fed in the form of a soft mash, mixed with water or butter-milk, as suggested above, and no other foods except green food, grit and water are necessary.

Lilly's Fattening Food is intended for the sole and only purpose of fattening, and would be entirely unsuitable for egg production for the same reason that Egg Mash and Scratch Food would not be satisfactory for fattening.

Much is lost by marketing poultry in poor condition. Bone, muscle and feathers are the most expensive parts of a bird. When these have been produced, flesh may be added at small expense by correct feeding.

Price (subject to change): 10 lbs., 30c; 25 lbs., 70c; 100 lbs., \$2.35; ton, \$45.00. **F. O. B. Seattle or Portland.**

No one food is suitable for all purposes. We manufacture a special food for each purpose.

Meat Food for Poultry

An Essential Part of the Diet Satisfactorily Supplied

UNDER natural conditions, with free range, poultry will find bugs and worms, but when confined they must be provided with animal matter of some kind. The most convenient and cheapest form is a good grade of meat scraps, except in rare instances where the poultryman is fortunately located so that he can procure fresh meat conveniently and at a reasonable price, in which case we recommend the use of fresh meat, provided that it is always strictly fresh and sweet. Tainted meat is extremely dangerous.

Our mash foods—Chick Mash, Growing Mash,

Egg Mash and Common Sense Egg Food, contain sufficient meat, and, when those foods are fed, no additional meat is necessary.

Care should be exercised in purchasing meat scraps, for there is a vast difference in the value of the various brands. Some are composed largely of waste materials, some have little food value, and some are positively harmful and unfit to be fed to poultry. We have long made a specialty of meat scraps, have handled a large percentage of all used on the Pacific Coast, and have been very particular to handle only the best brands.

LILLY'S MEAT SCRAPS

Highest in Protein.

Lowest in Fats.

55 per cent Protein

Lilly's Meat Scraps is the best grade of commercial meat scraps that it is possible to procure. It is prepared for us by a packing house that we have done business with for many years, and in which we have full confidence. Every shipment is carefully inspected before being packed in sacks branded "Lilly's."

It is the highest in protein, fifty-five per cent, lowest in fat, and is made of good, wholesome meat properly prepared. It is thoroughly cooked, and if stored in a dry place will keep indefinitely.

On account of the present high price and scarcity of meat, some manufacturers are producing a very inferior grade of meat scrap. We have been many years building up a reputation for Lilly's Meat Scraps, and, although we may be compelled to raise the price, we will not lower our standard.

For sale by dealers or supplied by us direct. Be sure that it is branded "Lilly's."

Price (subject to change): 10 lbs., 50c; 25 lbs., \$1.20; 100 lbs., \$4.00. F. O. B. Seattle or Portland.

DARLING'S MEAT SCRAPS

An Old And Reliable Brand Of Meat Food For Poultry

Darling & Co. was the first to manufacture a high grade of meat scraps, and is among the few who have maintained their high standard of excellence regardless of the scarcity of meat and the fact that the demand is greater than the supply.

Price (subject to change): \$4.00 per 100 lbs. F. O. B. Seattle or Portland.

LILLY'S BLOOD MEAL

79 Per Cent Protein: 3 Per Cent Fat

Blood Meal is richer in protein content than any of the other foods used for poultry, and, being so extremely high, it is necessary to use great care in feeding it.

It should not be fed oftener than three times per week, and the quantity for mature fowls should not exceed four per cent of the total feed; for chicks it should not exceed two per cent.

It is used mostly for balancing a ration, and is admirably adapted for that purpose.

Price (subject to change): 10 lbs., 50c; 100 lbs., \$4.25. F. O. B. Seattle or Portland.

LILLY'S FISH MEAT MEAL

High in Protein Low in Cost

Fish Meat Meal has proven to be an excellent and economical meat food for poultry. The early prejudices have been overcome by a process which removes from the fish all the ingredients which were objectionable.

It is used by many of the most prominent poultrymen and is endorsed by the experiment stations.

It is very rich in protein, considerably higher than most meat scrap and in a more available form, and the cost is less.

Price (subject to change): 10 lbs., 45c; 100 lbs., \$3.50. F. O. B. Seattle or Portland.

When buying Poultry Foods from your dealer, be sure that they are branded LILLY'S.

Ducks

The Pacific Northwest an Ideal Locality for Ducks.

THE breeding of ducks, for some unexplainable reason, has never been developed to any appreciable extent west of the Atlantic states. This does not mean that there are not large numbers of ducks raised and marketed in the Middle and Western states, but they are not supplied from what is termed "duck farms."

It is surprising that the Pacific Northwest has not developed duck culture to a greater extent, for if there is one place on this continent where all conditions are favorable for this branch of poultry culture it is the Pacific Coast, and the Puget Sound country in particular.

The mild, open winters allow for early spring ducklings, which in the markets bring such remunerative prices. We anticipate great activities in duck growing in this country.

When commencing with ducks, as with all live stock, the best is the most profitable. The nature of your business will determine the breed that will be most suitable.

The Pekin is unquestionably the best duck for purely market purposes and where meat alone is the consideration. If eggs be the objective, the Indian Runner must be taken into consideration, for the past decade has produced some truly wonderful records in egg production from this breed.

It is a comparatively easy matter to start in duck keeping in a small way. For a small flock, almost any dry shelter will be sufficient. For larger flocks more elaborate housing is advisable, and the matter should be studied carefully before building. We can furnish a good book, "Ducks and Geese," which gives plans for houses, as well as information in regard to breeding, feeding, preparing for market, etc.

Ducks will be benefited by running water if available, but it is not absolutely essential. A patch of grass and an inexpensive shelter with a dry floor is all that is necessary to start. Proper houses and runs can be provided as the business develops.

The usual foods which are provided for hens will be satisfactory for ducks. Mash foods are more relished than grains. The mash food should be fed in the morning. Table scraps, cooked vegetables, etc., may be added to the mash if desired. They should have only as much as they will eat up in about fifteen minutes. The mash should be moistened enough to make it crumbly; it must not be wet or sticky. If the ducks are being fattened, they should have a feed at noon. Grain foods are generally fed in the evening.

If the ducks are not on a range where they can procure green food, they must be provided with green food of some kind, such as cabbage, lettuce, etc., chopped fine; or sprouted oats. When green food is not available, potatoes, turnips, rutabagas, carrots or beets may be used as a substitute, but they must be boiled and mixed with the mash food.

Ducks are not very discriminating, but that does not mean that they may be fed spoiled grain, etc., for that would quickly upset their digestion.

The feeding hours should be regular, especially during the fattening period. Gentleness and quietness is essential at feeding time. Ducks are naturally nervous.

Cleanliness, a dry floor for sleeping quarters, dry litter and clean vessels will prevent sickness. Ducks are not very prone to disease when kept under proper conditions.

Geese

Very Profitable Where Conditions Are Favorable

THERE are thousands of farms in our midst where a few geese could be kept without any cost to the farmers. Around the streams and lakes, of which there are such an abundance in the Northwest, geese are in their element and will forage day after day without injury to crops or pastures. It is not desirable that they be allowed to roam on cow pastures at will, for cattle do not like to feed after them, especially where the range is limited and the geese taint the pasture. By a little management they can be kept from the pasture and their attention diverted to their natural feeding grounds, the sloughs, streams and waste places.

Very little feed will be required during the spring and summer months, but as the days grow shorter and the nights cooler a little grain before bedtime will help them and keep them attached to the particular place in which they are fed. Some farmers feed them at night in a house or barn so that they are sure of their whereabouts.

Although geese like damp locations, they should

have some high ground to which they can retire at will, for a continual residence on low, wet ground will be detrimental. They must have clean, dry sleeping quarters, in a sheltered location, with plenty of fresh air.

Disease is very rare among geese, and the young are very easy to raise, requiring very little food except forage. It is very necessary that the old goose be free from annoyance during the incubating period, for they will quickly forsake the nest if too much publicity is given them.

When the goslings are hatched, do not confine them and their mother unless it is quite necessary. Freedom to wander at will is the best treatment possible to give them. They will travel miles each day, nibbling the tender grass and other succulent morsels.

Geese intended for market should be confined to the fattening quarters at least four weeks before killing time, and should be fed liberally upon a fattening diet such as Lilly's Fattening Food, fed in the same manner as suggested for fattening chickens.

LILLY'S GRANULATED BONE

Makes Eggs, Bone, Muscle and Feathers

BONE is a great egg producer. It also makes bone, muscle and feathers, promotes health, is economical, and is in every way a desirable food for poultry. Fresh, green bone is best, provided that it is perfectly fresh and there is no tainted meat clinging to it, but few poultrymen can procure a sufficient quantity of green bone advantageously, and it is a task to cut them even when a bone cutter is available.

Green bone cannot be kept longer than a few days, and for that reason cannot be handled commercially. Lilly's Granulated Bone comes as near being green bone as can be kept without becoming moldy.

It is made from fresh, clean, slaughter-house bones, steam-cured, ground and screened to the correct size. The moisture is extracted, leaving the phosphates, lime, protein and fats. It will keep indefinitely if stored in a dry place.

It may be fed either in a hopper or mixed with other food. It is usually fed at the rate of ten to fifteen per cent of the total feed, and may be fed every day.

It is made in two sizes: Fine Granulated Bone for young stock and for mixing with mash foods, and Coarse Granulated Bone for feeding in hoppers or mixing with grain foods for mature fowls. If the order does not specify size, we ship Coarse Granulated Bone.

Price: 10 lbs., 35c; 25 lbs., 75c; 100 lbs., \$2.50; ton, \$46.00. F. O. B. Seattle or Portland.

No. 2 Granulated Bone Second Grade

This is made from the discolored bones which if mixed with the first grade would render it less attractive. It is made in the same manner and is used for the same purposes.

It is made in two sizes, the same as the first grade, but is packed in 100-lb. sacks only.

Price: 100 lbs., \$2.25; ton, \$42.00. F. O. B. Seattle or Portland.

Star Poultry Shell Good Grade Western Shell

Made from western oyster and clam shells which, although excellent for poultry food, make a less attractive product than the eastern oyster shell.

It is good, clean shell, carefully prepared, and crushed to the proper size for poultry. Packed in 100-lb. sacks only.

Price: 100 lbs., 85c; ton, \$14.00. F. O. B. Seattle or Portland.

GRANULATED OYSTER SHELL Made From Best Eastern Oyster Shell

Lime is essential for hens to form egg shells, and when they do not have free range it must be supplied in some form. The best and only really satisfactory form of lime for this purpose is found in oyster and clam shells, both of which have a composition very similar to egg shells, making them in every way superior to any other material.

It is made from the best eastern oyster shell, which is thicker and harder than the western oyster and clam shell, and by many poultrymen is considered better. We furnish it in two sizes: Coarse Granulated Shell for feeding in hoppers and mixing with grain foods, and Fine Granulated Shell for mixing with mash foods and for pigeons. Unless the order specifies the size wanted, we always furnish Coarse Granulated Shell.

Shell does not in any way take the place of grit; neither is there any kind of grit that is suitable for both grit and shell. Their functions are entirely different, and there is no material that is satisfactory for both.

Price: 10 lbs., 20c; 25 lbs., 35c; 100 lbs., \$1.10; ton, \$20.00. F. O. B. Seattle or Portland.

Turkeys

A Profitable Branch of Poultry Industry for the Northwest

THE breeding and raising of turkeys is a branch of poultry culture in which there are a great variety of opinions as to the best methods. There are, however, certain points upon which all breeders fully agree, among which are the necessity of free range, introduction of new blood, plenty of shade, abundance of insect food, great care in raising the poults, and a great variety of foods.

It will be readily seen that when the birds have plenty of free range most of the difficulties in connection with the old birds will be eliminated; but there will still remain the necessity of great care in raising the poults.

The following by Mr. J. F. Crangle, in "Turkeys, Their Care and Management," is the method of a successful breeder:

"If you are on a limited range, or for any reason you have to keep your birds confined, I mean young poults, take three boards twelve or fourteen inches wide and ten or twelve feet long and make a triangular pen. In this pen put the old turkey and her poults. Do not confine the hen. She will jump out and in over the boards and will not leave her poults. It is best to leave the poults in this pen for fifteen to eighteen days, then let them range with their mother. Many persons think it is necessary to put the hen turkey in a coop to keep her near her young, but this is not the case, as the mother will stay with the poults; you could hardly drive her away. When the young poults are confined in a pen as above described, it is necessary while so young to feed them four times a day with stale bread moistened with milk. If the weather is rainy and wet, it is sometimes well to use red pepper enough to make the bread quite warm. If any of your poults are drooping it will tone them up. Clabbered milk is also good for them. Should you find that the young turkeys are drooping and do not seem to pick up, the very first thing to look for is lice. If your poults have lice or ticks they will not do well, and it is almost

impossible to raise them. You will find at times a large blue tick on turkeys and turkey poults; they are on the neck and head only. If you should find any ticks on your poults, pick them off, then use clean lard on the head and neck. It will kill the nits that would hatch if you did not use some preventive. For the two other varieties of lice, use any good insect powder, but always be careful that none gets in their eyes. Hen turkeys generally keep free from lice if they can find any place to dust themselves, but some are very lazy and if these hens have poults they will be sure to be infested with lice, too. In looking for lice it is best to examine the little wings, as generally you will find them at the base of quills, also around vent. For the terrible ticks, which are almost sure death, look upon the neck, push back the feathers carefully until you reach the top of the head. You can easily see them, as they are good sized, and the older ones are dark blue in color, usually full of blood. If you keep your poults free from lice you will have overcome almost all danger of loss."

"Stale bread moistened in milk should be fed to the poults for three or four weeks, then gradually get them to eat wheat and fine cracked corn. This grain should be scalded, as it will then assist digestion, but do not feed it until it has thoroughly cooled. Indigestion is very prevalent among turkeys, both young and full grown. If your poults should have diarrhoea from any cause, one feed of boiled rice will usually stop the trouble."

Where Mr. Crangle suggests wheat and corn, we would recommend the mixed poultry foods, Chick Food, Growing Food and Scratch Food, as being more suitable; also the mash foods in their regular order. These foods should be fed in the same manner as suggested for chickens elsewhere in this book.

For those who wish more information in regard to turkeys, we would recommend the book "Turkeys, Their Care and Management," listed on page 190.

Guineas

In many of the Southern states guinea culture has developed considerably. The farms are conducted purely for the raising of "guinea chicks," as they are termed in the markets. These chicks are marketed at from one and one-quarter to two pounds each, and are served to an unsuspecting public as game.

Guineas do not thrive in captivity, but do well with free range on rough land where they can choose their own nesting place. There are quite a few guineas in Eastern Washington, where they appear to do well. There are very few west of the Cascades.

They need practically the same food as chickens. When insects are plentiful, they will require very little food during the spring and summer. They should have at least one good feed each day during the winter, preferably before roosting time.

Pheasants

The raising of pheasants requires patience in large quantities. The young are very tender and require very careful handling. It is one of the branches in which the women shine particularly; they are more successful than men in raising the young birds.

The foods required for pheasants are various. Practically all of the seeds and grains suitable for poultry and pigeons can be fed to them. The young are raised in the same manner as turkey poults, with the variations required by location and available materials.

Pheasant culture has been given a great impetus by the game commissions in restocking the Northwest with winged game. The King County Game Warden has an ideal pheasant farm.

ALFALFA LEAVES AND BLOSSOMS A Splendid Food for Poultry

ALFALFA is a splendid food for poultry, as well as stock. It is very high in food values and the protein content is greater than that in some grains. As the cost is low, it is one of the most economical of egg producers. It cannot, of course, be used as the basis of a poultry ration, but is valuable as an adjunct.

Whole alfalfa hay, or even green alfalfa, is not suitable for poultry food, as the stalks are wasted. Alfalfa meal, such as is used for stock, contains the stalks, which, even though ground or crushed, contains too much fiber, which is undigestible for poultry, and in large quantities is liable to be harmful.

Lilly's Alfalfa Leaves and Blossoms is made from the leaves and blossoms only, and as they contain much more protein than the stems, the food value is greater. As it contains no stems, there is no coarse, undigestible fiber. It is cut to a coarse meal and the dust is screened out. There is no waste; it is all food. It is equally good for stock.

It is usually mixed with mash food, either dry or moistened. Best results are obtained by scalding it with a small quantity of boiling water, covering it with a blanket, leaving it to steam for several hours and then mixing it with a mash food. When steamed it takes the place of green food to some extent. There is no danger of feeding too much.

Price: 10 lbs., 25c; 50 lbs., \$1.00; 100 lbs., \$1.85; ton, \$34.00. F. O. B. Seattle or Portland.

LILLY'S CRYSTAL GRIT

A Necessary Part of the Poultry Ration

Grit is as essential as food for poultry; it takes the place of teeth for masticating food. The value of poultry grit is variable; some of it is soft and worthless. Some poultrymen think that because their land may be gravelly they do not need to supply grit. Gravel and sand are generally of little use as grit; they are not hard and sharp enough for masticating purposes, and after a time cause debility.

Lilly's Crystal Grit is as hard as flint, clean and of uniform size, and is the best possible material for the purpose. It is pure granite rock, ground and screened to the proper size, and being inlaid with mica the edges remain sharp as long as a particle remains in the gizzard.

Grit should be kept before the birds at all times, and is best served in our Grit and Shell Boxes listed elsewhere in this catalog.

It is made in three sizes: No. 1, for chicks and young ducks; No. 2, for growing chicks, small hens and ducks; No. 3, for large hens, turkeys and geese. If size is not specified in orders we always ship the No. 3.

Prices: 10 lbs., 15c; 25 lbs., 30c; 100 lbs., 75c. F. O. B. Seattle or Portland.

LILLY'S LIMESTONE GRIT

This is to supply the demand of some of our customers who depend upon Limestone Grit to supply both grit for mastication and lime for forming egg shells. It is made in three sizes, the same as Crystal Grit.

Price: 100 lbs., 75c. F. O. B. Seattle or Portland.

LILLY'S POULTRY OATS

Oats, sprouted or otherwise, are excellent food for poultry, but ordinary feed oats are usually unfit for this purpose, being light, containing too much coarse hull and fiber, and having poor germinating qualities. This is a special grade; short, plump, heavy and without beard.

Price (subject to change): 100 lbs., \$2.25. F. O. B. Seattle.

LILLY'S POULTRY TONIC

TONES UP THE SYSTEM

A Regulator and Stimulant - Not an Egg Forcer

WE DO NOT ADVISE the indiscriminate and constant use of any form of tonic. There are times, however, when the flock may be benefited to a wonderful extent by the correct use of a properly prepared tonic. During cold, wet weather, or after moulting, the birds are very often in need of a stimulant.

Lilly's Poultry Tonic is intended for use at such times. It stimulates the appetite and aids digestion, enabling the hen to get the full benefit of her food and convert it into eggs.

By regulating the blood, liver and digestive organs, it imparts warmth to the body and healthy activity to all of the organs. By keeping the system in a vigorous, healthy condition, it wards off disease.

It is best fed mixed with the mash food at the rate of two heaping tablespoonfuls to every twelve hens or thirty to forty chicks. In cold, damp weather the amount may be doubled. There is nothing about this tonic that is harmful, except that it is too stimulating to form a regular part of the diet. We recommend it only when the birds are in need of a stimulant.

Price: Small Package (about 1 3/4 lbs.), 25c; Large Package (about 3 3/4 lbs.), 50c.

LILLY'S GRANULATED CHARCOAL

Specially prepared for Poultry, Hogs and Other Stock

Lilly's Granulated Charcoal is made from eastern willow specially prepared for poultry and stock. It is screened to two sizes: Coarse Granulated Charcoal for hens, and Fine Granulated Charcoal for chicks, and for mixing with mash foods if desired.

Charcoal is valuable as a regulator, purifier, aid

Price: Carton (about 3 lbs.), 25c; 50 lbs., \$1.25; 100 lbs., \$2.50. F. O. B. Seattle or Portland.

LILLY'S POULTRY PEPPER

Stimulates the Ovaries

Poultry Pepper is very stimulating, and should be used with discretion, but may often be used to advantage and results obtained that could not be had from any other source.

In cold, wet weather it gives tone to the system, puts vim and snap into the birds, and is a great help to egg production.

Lilly's Poultry Pepper is pure cayenne pepper finely ground. It is best fed with the mash food at the rate of one tablespoonful to each ten hens.

Price: Carton (about 3/4 lb.), 25c.

LILLY'S POULTRY MUSTARD

An Aid to Digestion

Mustard is a valuable condiment for poultry and stock. It is a great aid to digestion, is very heating and a splendid stimulant in bad weather.

Lilly's Poultry Mustard is milled from a high grade of mustard seed, and is pure and fresh. A teaspoonful for each six to ten birds over two months old, mixed with the mash food, will often be very beneficial.

It should not be fed to chicks less than two or three months old.

Price: Carton (about 3/4 lb.), 25c.

The Use and Misuse of Tonics

A properly fed and housed flock of poultry will not, as a general rule, need tonics or condiments of any kind. There are times when they will be benefited by the judicious use of a suitable tonic or laxative, but to systematically dose the birds with "egg producer" or "laying tonic" is dangerous. Excessive stimulation and forcing will soon be the finish of poultry, the same as it will of humans.

Good food, correctly balanced and fed consistently and cleanly, combined with proper housing, dry and free from draughts, with ventilation to supply

abundance of fresh air, and freedom from lice and mites, will obviate the use of all kinds of dope.

When it is necessary to feed a tonic, do not feed one guaranteed to make hens lay, for although it is possible to force egg production for a short time, the effect of over stimulation will be a general breakdown of the ovarian system, and sickness is the result. The tonic should be one that will help them to recuperate from disability and give them a fresh start on the road to health. It should be an energy producer rather than an egg forcer.

The Feeding of Pigeons

Most Pigeon Troubles are the Effect of Improper Feeding

VARIETY is essential in a pigeon ration, for it is only by feeding a great variety of grains that the flock will be kept healthy and profitable. The foods which will be most suitable will differ according to location. Here in the Pacific Northwest the ration should consist of red wheat, corn, kaffir corn, buckwheat, hemp, millet, vetch and peas. These are best fed in a mixture. Some feed peas and hemp separately, but there is no great advantage gained in doing so.

One of the commonest sources of trouble is feeding too much wheat. Pigeons can stand a great deal of corn, but too much wheat will cause diarrhoea, especially if it be other than hard red wheat.

All grain fed to pigeons must be well aged and absolutely dry; it must also be fed in a place where it cannot become damp, sour, moldy,

or contaminated, for nothing will more quickly disarrange their digestion and cause sickness.

Feed should never be thrown on the soiled ground of the flight pen. It should be placed in the nesting house, preferably on a shelf, table or bench.

There are two methods of feeding; one known as hand feeding and the other hopper feeding. Both are successful when properly applied. When hand feeding is the rule the birds should be fed twice per day an amount that they will eat up clean in about fifteen minutes. By hopper feeding the food is before them all the time.

It is also necessary to keep before them, in a box or hopper, a supply of medium size granite grit. Granulated oyster shell should also be provided, especially during the breeding period. It is also beneficial for young birds.

Pigeons, either old or young, should never be fed stale bread or scraps from the table. They should have a little green food such as finely chopped lettuce, cabbage or clover, but it must be fresh and sweet. A lump of rock salt must be provided.

HOLLY PIGEON FOOD

A Balanced Grain and Seed Ration for Pigeons

Holly Pigeon Food is a carefully prepared balanced food for pigeons, and is composed of the various grains and seeds that pigeons thrive upon. We are very careful to use none but good sound grains which are well aged, for new grain is very liable to cause trouble.

This food contains no grit, shell, charcoal or salt, and these materials, together with water and occasionally a little finely chopped green food, should be provided separately in suitable receptacles which will insure

cleanliness. This combination forms a complete ration for pigeons, and no other additions are necessary or beneficial.

Price: 10 lbs., 40c; 25 lbs., 80c; 100 lbs., \$2.75.

HOLLY BIRD SEED

The Best Combination of Seeds for Canaries

This is a combination of the best re-cleaned seeds of the correct varieties and in the proper proportions to insure health, and thus perfect song, of canaries and other cage birds. The proportions are of the utmost importance. Many bird seed mixtures are not correctly balanced, and for that reason are entirely unsatisfactory.

A package of Bird Gravel and a piece of Cuttle Bone is included in each package.

Price: Per package (about one pound)10c

Bird Gravel. Pure granite rock ground to the correct size for canaries. Absolutely necessary for good health of birds	10c per lb.
Cuttle Bone	Two pieces 5c; 25c per lb.
Sicily Canary Seed	15c per lb.
Hemp Seed	10c per lb.
Millet Seed	10c per lb.
Bape Seed	10c per lb.
Blue Poppy Seed	15c per lb.
Sunflower Seed	10c per lb.

If shipped by parcel post, postage will be additional.

We make no charge for sacks or packing. Feed, grain and seeds are sold on gross weights.

LILLY'S LICE AND MITE LIQUID

Disposes of the Poultryman's Greatest Liability

Efficiency Guaranteed

ARE your poultry houses infested with mites? If not, you are more fortunate than most other poultrymen. But, are you sure? Are your hens laying well? Are they healthy and full of life? Are their combs red, eyes bright and feathers glossy? We receive many inquiries for drugs to dope poultry for some disease such as cholera when investigation proves that there is nothing in the world the matter with the birds except mites or lice.

If you are one of those who, because you see no mites, take it for granted that there are none in your houses, and do nothing to combat them, it is a safe bet that if you look under the roosts and in cracks you will find plenty of them.

Some consider lice and mites a necessary adjunct to the poultry business and believe that they must make the best of an unfortunate condition. Many of the failures in this business are due directly to lice and mites. No louse-infested poultry plant is profitable. They are more prevalent and require closer watching than any disease, and, by debilitating the birds, are the cause of most disease.

Mites, the greatest drain on the poultryman's profits, are not necessary and should not be tolerated. Lilly's Lice and Mite Liquid is guaranteed to destroy them if used according to directions.

Lilly's Lice and Mite Liquid is ready for use and does not require diluting. It is best applied with a small spray pump, and should be sprayed on roosts, dropping boards, nests and all places where mites can hide, giving special attention to cracks and corners. It should not be applied directly on the birds. It should be applied at frequent intervals to kill the young as fast as they hatch. The best way to control lice and mites is to use Lilly's Lice and Mite Liquid as a preventive; don't wait until they get a start. Sold by dealers or supplied by us direct. Can be shipped by parcel post when properly boxed; postage additional.

Quart 35c; Half-gallon 60c; Gallon \$1.00; Five Gallons \$3.50. F. O. B. Seattle or Portland.

LILLY'S LICE POWDER

Effectual Where Liquid Cannot Be Applied

We recommend the use of Lilly's Lice and Mite Liquid wherever it is practical, but in some cases, such as for setting hens, young chicks, exhibition birds, etc., the liquid cannot well be used, and Lilly's Lice Powder is the best substitute.

Before a hen is set, she should be held up by the legs and dusted thoroughly, working the powder well down among the feathers. The nest should also be dusted. This will avoid three weeks' torture for the hen, she will not desert her nest, and the chicks will not inherit lice. Brooders and houses where chicks are kept should be dusted frequently.

It is also valuable for exterminating insects on dogs, cats and other animals, also on plants. For sale by dealers, may be ordered direct from us. Price: Carton (about one pound), 25c. Postage additional.

LILLY'S LICE OINTMENT

Reduces Mortality Among Chicks

Young chicks are very subject to Head Lice. These parasites attach themselves to the young and tender birds at the base of the skull, and are responsible for much mortality among chicks. Lice powder is useless to dislodge them, for they sink their heads clear into the bird.

Price 25c. Postage 5c additional.

It is our desire to help the poultry industry in the Northwest in every way possible. When you are in doubt or need advice in regard to poultry, a letter addressed to our Poultry Department will receive prompt and careful attention.

Diseases of Poultry

"An Ounce of Prevention is Worth a Pound of Cure"

PERHAPS the best advice to be offered in regard to poultry diseases is how to prevent them, rather than how to cure them. We do not wish to convey the impression that poultry diseases are not curable, for most of the common ailments can be cured if properly treated, but the constant effort of the poultryman should be to prevent disease.

If disease does creep in, the first treatment should

be to remove the cause, after which the trouble will be infinitely easier to combat. A very large percentage of poultry diseases originate in "colds," which if not checked promptly are liable to develop into something much more seriously.

Improper feeding, bad housing, lice and mites are all contributing factors to diseases of poultry, for from those causes the birds are weakened and debilitated and become easy prey to disease.

LILLY'S ROUP REMEDY

For the Prevention and Cure of Roup, Colds, Etc.

Roup is the most common and most easily contracted of all diseases among poultry. It is a germ disease and the source is usually a cold. If colds are attended to promptly they can be easily cured, but if neglected they are liable to develop into roup.

The symptoms of roup are froth and bubbles in the corners of the eyes, sneezing and a watery discharge from the eyes and nose. When the head swells, eyes bulge out, cheesy masses form in throat, mouth and beneath the eyelids, and there is a bad odor, the disease is known as diphtheric roup. It is highly contagious.

Lilly's Roup Remedy prevents and cures Roup, Blackhead, White Comb, Canker, Sore Head and other bacteria diseases.

Price 25c. Postage 5c additional.

LILLY'S CHOLERA REMEDY

Keeps Intestines in a Healthy Condition

Cholera is a disease dreaded by all poultrymen. Fortunately for us it is not prevalent in this section; there is, however, a form of diarrhoea that resembles cholera and is often fatal. Cleanliness is the first essential in the prevention of cholera.

Lilly's Cholera Remedy should be used in all cases of diarrhoea. It is valuable for indigestion, constipation and all bowel troubles in adult fowls. It should not be used for young chicks, for which Lilly's Intestinal and Liver Remedy is recommended.

Price 25c. Postage 5c additional.

LILLY'S MICROZONE

A Splendid Germicide in Convenient Form

A germ killer and preventive of all diseases among poultry, hogs and other stock, also a splendid disinfectant and healer for sores, cuts and wounds. It is in tablet form, will keep indefinitely, and is dissolved in water when required for use.

Price 25c, postpaid.

LILLY'S WHITE DIARRHOEA REMEDY

For All Intestinal Troubles in Little Chicks

The treatment of White Diarrhoea among little chicks is greatly simplified since it has been proven that it is a bacteria disease and must be treated accordingly. Lilly's White Diarrhoea Remedy is the most reliable treatment yet discovered. It is in tablet form and is administered in drinking water or food.

Price 25c, postpaid.

LILLY'S INTESTINAL AND LIVER REMEDY

Especially Valuable for Young Chicks

The great losses from White Diarrhoea, Liver Trouble, Worms and other affections of the intestines and liver have brought forth many remedies, some of which are good, but many bad. Before offering Lilly's Intestinal and Liver Remedy we were thor-

oughly convinced that it would do the work for which it is intended.

In addition to its curative qualities it is a valuable tonic for either young or old birds when in a debilitated or rundown condition.

Price 25c. Postage 5c additional.

With sanitary conditions and Lilly's Poultry Foods drugs are seldom necessary.

Incubation

A Few Suggestions in Regard to Operation of the Incubator

THE MANAGEMENT of an incubator commences practically before the eggs are laid. Too many people forget that unless the eggs are produced right it is impossible for the machine to hatch them successfully.

It may be as well to mention here a few things necessary for the production of good eggs that will hatch strong, vigorous chicks.

The selection of the breeding pen should be made carefully from healthy stock. Never use a male bird that has had any serious sickness, and be sure that he is from good stock. Select the females from well matured birds. Allow the breeding pen as much exercise as possible.

Feed generously, but not extravagantly, on good food, at all times allowing plenty of green food.

When the eggs are laid, let it be in clean nests, and collect them at least once each day. All eggs that are intended for the incubator should be kept in a clean place where the temperature does not vary below 50 or above 65 degrees.

Do not expose eggs to draughts or air currents, as they will cause excessive evaporation. Never let eggs stand in hot sun.

When the incubator is unpacked, the first thing to do is to search for the maker's directions. In the Pacific Coast Ideal they will be found in the egg tray. These instructions tell how to set the machine up, and how to place the lamp. As the manufacturers know every detail of their machines, their instructions should be followed to the letter, regardless of the operator's own ideas in regard to how an incubator should be run.

The first question that will present itself to the operator will be where the incubator should be placed.

Generally the house cellar or basement is the most satisfactory, provided the air is sweet and not unpleasant to the operator. A good general rule, we find, is to figure that anything that is unpleasant to the human in the way of draughts and smells is equally detrimental to the hatching of chicks.

If no cellar is available, the root house or barn, or even the attic, will give good results if a little ingenuity be used. If the walls of the building are thin and porous, it is quite easy to supplement them with a little added protection near where the machine is situated.

See that the machine stands quite level. This gives a more equal circulation, and consequently a more uniform temperature.

In starting the incubator, run for a while with a low lamp flame. This may be increased as the machine warms up, and when the full temperature of 102 to 103 degrees is reached the flame should be turned to the height that will hold the temperature at that point.

When the operator is satisfied that the machine is regulated according to the maker's instructions, it is then time to place the eggs in the incubator.

Do not be over zealous to fill the incubator to its full capacity. Select the eggs carefully. Discard all that are irregular or under sized. Do not use either very large or very small eggs. A nice uniform lot of eggs will give the best results.

When certain that the incubator is properly regulated, place the eggs in it and leave it alone until the temperature again reaches 103 degrees. With the Ideal Incubator, this will take from six to twelve hours.

Just when the temperature is hanging around the 103 point, it is well to take a look at the thermometer occasionally, and if it should by chance run over 103½, raise the damper, with the thumb screw, just a trifle. This will release a little heat, and the machine will find its proper level.

Regarding the ventilation. During winter and spring, or cold weather, the ventilator at top of Ideal Incubator should remain about one-fourth open from start to finish. During warmer weather, open one-half to two-thirds, and if very hot, after temperature is up to 103, open full, and keep open.

Commence to turn and air the eggs on the morning of the third day. Most incubator makers advise the cooling of eggs. We prefer to use the word *airing*. We never allow our eggs to be in a draught or exposed to cold. If eggs are being aired for, say ten minutes, on a cold morning, throw an old sack or blanket over them. If the weather is warm, this precaution is unnecessary, but we wish to say most emphatically that eggs must not be exposed to low temperatures during the period of incubation.

The eggs should be turned once or twice each day until the eighteenth day, after which they should be left alone until the hatch comes off.

After the chicks are hatched they will come forward to the light, and will fall into the chick nursery. When certain that all of the chicks that are going to hatch have done so, the egg tray and broken shells should be removed from the incubator. This will allow the chicks more room to move around, and they will quickly dry off, and want to sleep.

Most operators leave the chicks in the incubator from 24 to 36 hours, after which time they should be removed to the brooder. See The Brooding of Chicks.

PACIFIC COAST IDEAL INCUBATORS and BROODERS

For Pacific Coast Conditions

OUR EXPERIENCE during the several years that we have handled the Pacific Coast Ideal Incubator has proved conclusively that it is the best all-purpose machine on the market, especially for Pacific Coast conditions. We have handled many of the best makes of incubators, most of them much higher in price, but none of them have given such universal satisfaction as the Pacific Coast Ideal. Considering the great number that are now in use, and the inexperience of many of the users, the percentage of complaints has been phenomenally small.

Its simplicity in operation has made it a great favorite among those who have had little or no experience, as well as poultrymen in general.

The Pacific Coast Ideal Incubator for 1916 is even better than heretofore. A number of details have been added to make it as nearly perfect as it is possible to be. There has been no change in the principle of the machine for nearly fifteen years, which means a great deal when we consider that a

great majority of incubators are changing continually.

The Pacific Coast Ideal is built right and from good material. Chicks hatched in them are started right to make good husky stock.

It is built especially for Pacific Coast conditions, and after a careful study of all the factors that make this section of the country different in respect to incubation.

The Pacific Coast Ideal is hot water heated by a copper heating system that cannot get out of order. It requires no attention other than filling the lamp once each day and turning the eggs.

Each machine is supplied with full directions for operation, thermometer, egg tester, and is in every way complete. It is made in four sizes as described in following pages.

If you are interested in incubators and brooders we will mail you the Ideal Catalog, explaining details of construction and principles of heating and ventilation of these machines. They are different from others, and in that difference lies their secret of success.

No. 8
PACIFIC COAST IDEAL
Hot Water Incubator

The No. 8 Pacific Coast Ideal is the size preferred by many of the more extensive poultrymen. Construction and material is the same in all the four sizes, and is of the best. The walls are over two inches thick, thoroughly insulated, and consist of three separate and distinct walls with air space. The door is $1\frac{1}{4}$ inches thick with two thicknesses of glass with dead air space between.

The incubator is hot-water heated. The heater is a tubular copper tank extending around the entire egg chamber, and so constructed that the circulation of water is perfect, insuring an even temperature in all parts of the egg chamber. The regulator and thermometer are of the best.

Capacity, 360 to 400 hen eggs; duck, goose or turkey eggs in proportion to size.

Floor space, 34x53 inches. Height, 32 $\frac{1}{4}$ inches. Shipping weight, 200 lbs.

PRICE, \$28.00

F. O. B. Seattle, Portland, San Francisco or Los Angeles.

No. 3 PACIFIC COAST IDEAL Hot Water Incubator

This size is suitable for the larger breeders and is also popular with beginners as it allows for expansion; will hatch a small number of eggs equally as well as full capacity, and the expense of running is very little more than for the smaller machines.

Capacity, 240 hen eggs; or duck, goose or turkey eggs in proportion to size.

Floor space, 30x42 inches. Height, 32 $\frac{1}{4}$ inches. Shipping weight, 135 lbs.

PRICE, \$18.00.

F. O. B. Seattle, Portland, San Francisco or Los Angeles.

No. 2 PACIFIC COAST IDEAL INCUBATOR Hot Water System

This medium size machine is popular with all classes of poultrymen. It is small enough for the beginner, and many of the more extensive poultrymen prefer several small machines rather than one large machine. The construction and material is the same as in the larger machines.

All sizes of the Pacific Coast Ideal have proved most satisfactory in the hatching of duck, goose and turkey eggs. The hot water principle is the best for all incubation, and especially so for hatching duck, goose and turkey eggs.

Capacity, 120 hen eggs; or duck, goose or turkey eggs in proportion to size.

Floor space, 24 $\frac{1}{2}$ x30 inches.

Height, 32 $\frac{1}{4}$ inches.

Shipping weight, 90 lbs.

PRICE, \$12.50.

F. O. B. Seattle, Portland, San Francisco or Los Angeles.

We will be glad to mail you the Ideal Incubator and Brooder Catalog if you wish it.

No. 1 PACIFIC COAST IDEAL INCUBATOR

Hot Water System

This size is used mostly by small breeders, but is used by some of the larger poultrymen to set at the same time with larger incubators, transferring the eggs to the larger machines when the unfertile eggs are culled out. It differs from the others only in size, and is perfectly reliable in every way.

This low-priced high-grade incubator makes it possible for those who have only a small flock, and would otherwise depend upon hens for hatching, to secure chicks earlier than would be possible with hens. The early-hatched chick is the most profitable.

Capacity, 60 hen eggs, or duck, goose or turkey eggs in proportion to size.

Floor space, 20x24 inches. Height, 30 $\frac{3}{4}$ inches. Shipping weight, 65 lbs.

PRICE, \$9.00.

F. O. B. Seattle, Portland, San Francisco or Los Angeles.

THE IDEAL HOVER For Brooder Houses or Home-made Brooders

The Ideal Hover is the complete working parts of a brooder, without the outside case, and may be used in many ways. Any man who can use a saw and hammer can build the outside case, or they may be used in brood-houses, colony houses or outbuildings. They are used in many of the largest poultry plants, and are most generally used in the unit system in brood-houses. Capacity, 100 to 150 chickens.

Price: Complete with Lamp Box,
Lamp, Thermometer, etc., as
shown in cut.....\$7.00
Without Lamp Box..... 6.00

The Ideal Catalog explains how the Ideal differs from other incubators; why the heating and ventilating systems are superior; why it is so simply and easily operated; why it hatches a larger percentage of chicks; why the chicks are as strong and sturdy as hen-hatched chicks; and how these high-grade incubators can be sold at such low prices. We will mail it to you, free, if you wish it.

IDEAL BROODERS

For Either Indoor or Outdoor Use

THE IDEAL BROODER has for many years given excellent satisfaction, but the new model has several material improvements. The metal lamp-box is placed outside the brooder, allowing more room for the chicks. There is a glass door over the exercising room and a wooden door over the hover, giving easy access to chicks in the hover.

The brooder is divided into two compartments, the hover and the exercising room. The hover is directly under the heating pipe, and is separated from the exercising room by a heavy felt curtain. The exercising room is slightly cooler than the hover, and is directly under the glass door, giving plenty of light

and sunshine to the chicks. Both doors are hinged and can be raised so that the entire interior of the brooder can be gotten at for cleaning or caring for the chicks.

The brooder is heated by hot air supplied by a high-grade lamp placed in a galvanized iron lamp box outside the brooder, insuring safety.

Although these brooders are intended for use either indoors or outdoors, we do not recommend the use of any brooder, regardless of style or make, outdoors without some shelter over it; especially in this locality, where rainfall is heavy during the spring months.

No. 1 Ideal Brooder

Capacity, 100 chicks. Floor space, 24x30½ inches. Shipping weight, 70 lbs.

PRICE, \$8.00.

F. O. B. Seattle, Portland, San Francisco or Los Angeles.

No. 2 Ideal Brooder

Capacity, 200 chicks. Floor space, 24x44½ inches. Shipping weight, 90 lbs.

PRICE, \$10.00.

F. O. B. Seattle, Portland, San Francisco or Los Angeles.

High price and piano finish does not necessarily make a good incubator or brooder.

Lilly's Certified Incubator Thermometer

The thermometer is a vital part of the poultryman's outfit, for an inaccurate thermometer is very liable to prove exceedingly expensive.

This is the most accurate incubator thermometer made. After it has been thoroughly tested, the scale is engraved on the glass tube and a certificate showing the number and test of that particular thermometer accompanies each thermometer as a guarantee of accuracy.

It may be used in any incubator, and may be either suspended on a wire or laid directly on the eggs.
No. 1207. Certified Incubator Thermometer, \$1.00 each; \$10.00 per dozen; postpaid.

Wilder

Electric Lighted Thermometer

This outfit makes it possible to read the thermometer at night, or when the light is poor, without opening the door of the incubator.

The outfit consists of a guaranteed Wilder Incubator Thermometer with electric bulb in a socket attached to back and a battery in flash-light metal case. The battery is placed outside of incubator, and when a reading is desired it is only necessary to press the button on side of battery case.

No. 1206. Wilder Electric Lighted Thermometer, complete with battery.... \$3.00, postpaid
Extra Battery 25c, postpaid

Upright Incubator Thermometer

May be used in any incubator in which the egg chamber is three inches or more in depth. It is preferred by many as the bulb comes in direct contact with the eggs. A stand for supporting it accompanies each thermometer.

No. 1065, 35c each, \$3.50 doz., postpaid.

Lilly's Standard Incubator Thermometer

The Standard Incubator Thermometer is the type most generally used, is thoroughly tested and entirely dependable. It is made by the Chas. Wilder Co., which is a guarantee of its accuracy.

This thermometer may be used in any style of incubator now in common use. It may be either suspended on a wire, reclined on a base which accompanies some incubators, or laid directly on the eggs.

The regular price of this thermometer is 75c, but by purchasing in immense quantities we are enabled to offer it at an exceedingly low price.

No. 1064. Standard Incubator Thermometer, 50c each; \$5.00 per dozen; postpaid.

Tycos Incubator Hygrometer

The Hygrometer shows the actual percentage of moisture surrounding the eggs, just as the thermometer shows the temperature. It is not a regulator of moisture, but is an indicator of moisture conditions, so that if not correct, they may be made so. Full instructions accompany each instrument.

No. 1213 \$1.50, postpaid
Extra Wicks, 10c ea., \$1.00 doz.

Lilly's Standard Brooder Thermometer

The most generally used type of brooder thermometer. Has metal scale with wooden base to fit in round hole in top of hover. The bulb is protected by a metal shield. Thoroughly reliable.

No. 1062. Standard Brooder Thermometer, 50c each, \$5.00 dozen, postpaid.

LILLY'S INCUBATOR and BROODER LAMPS

THE LAMP is a very important part of the poultryman's outfit. Cheap, poorly constructed lamps are a menace to his plant. Although there are numerous devices and attachments to be used in connection with incubator and brooder lamps, we believe that the safest and most satisfactory lamp is the one consisting simply of a well constructed fount and chimney and a Sun Hinge burner.

Our lamps are of the best design, material and workmanship. The burners are the Sun Hinge pattern, with detachable perforated base, easily removed for cleaning.

- No. 1300. No. 1 Incubator and Brooder Lamp complete. Diameter of fount, 6 in. Price, postpaid...70c each; \$7.00 doz.
- No. 1301. No. 2 Incubator and Brooder Lamp complete. Diameter of fount, 7 in. Price, postpaid...75c each; \$7.50 doz.
- No. 1302. No. 3 Incubator and Brooder Lamp complete. Diameter of fount, 8½ in. Price, postpaid...90c each; \$9.00 doz.
- No. 1310. No. 1 Lamp Fount. Postpaid...35c each; \$3.50 doz.
- No. 1311. No. 2 Lamp Fount. Postpaid...45c each; \$4.50 doz.
- No. 1312. No. 3 Lamp Fount. Postpaid...55c each; \$5.50 doz.
- No. 1320. No. 1 Sun Hinge Burner.....20c each; \$2.00 doz.
- No. 1321. No. 2 Sun Hinge Burner.....25c each; \$2.50 doz.
- No. 1322. No. 3 Sun Hinge Burner.....40c each; \$4.00 doz.

- No. 1330. No. 1 Chimney...25c ea.; \$2.50 doz.
- No. 1331. No. 2 Chimney...25c ea.; \$2.50 doz.
- No. 1332. No. 3 Chimney...25c ea.; \$2.50 doz.
- No. 1340. No. 1 Wicks, ⅝ in.....20c doz.
- No. 1341. No. 2 Wicks, 1 in.....20c doz.
- No. 1342. No. 3 Wicks, 1½ in.....25c doz.

These lamps cannot be used with the Ideal Incubators or Brooders, as the founts are too large. We can furnish Ideal lamps and parts at same prices, but in ordering be sure to specify that they are for the Ideal Incubators or Brooders.

LILLY'S Never-Smoke Brooder Lamp

The Never-Smoke Lamp is made especially for brooders, and may be used in many places where it is not practical to use a chimney. The Never-Smoke burners do not require chimneys. The construction is such that it gives a large amount of heat with a

minimum consumption of oil. It will not blow out, and is always reliable. Diameter of fount is six inches, and height, including burner, is eight inches. They are especially intended for use where there is no sleeve for chimney to fit into. It is made for No. 2 burner only.

- No. 1011. Never-Smoke Lamp complete. Price, postpaid\$1.00 each; \$10.00 doz.
- No. 1315. Never-Smoke Lamp Fount. Postpaid60c each; \$6.00 doz.
- No. 1325. Never-Smoke Burner. Postpaid40c each; \$4.00 doz.

Barbee Wire Nests

Wire nests are sanitary, there being no place for mites. They may be hung on the wall, and are easily taken down for cleaning. Weight 5 lbs. doz.

- No. 107.....10c each;
- \$1.00 dozen

Egg Tester

Simple, convenient, practical and cheap. May be used on any lamp with a No. 2 burner, or over an electric light or candle.

- No. 1007. Postpaid...30c

China Nest Eggs

- No. 1019. Weight ¾ lb. per doz..2 for 5c; 25c doz.; \$2.50 gross

Green Food for Poultry

A Necessary and Economical Part of the Ration

GREEN FOOD is not only necessary for health for all poultry, young or old, but is also an economical part of the diet. When the flock does not have free range where they can procure it, green food in some form should be supplied.

Kale, cabbage, lettuce, clover, lawn clippings, and similar green foods are good, and on the Pacific Coast, by proper management, some of them can be available at all seasons. When these are not available, mangels, carrots, etc., may be used as substitutes, but they are not so good.

The best green food for all poultry, and little chicks in particular, is sprouted grain, as in addition to supplying green food it is a valuable predigested grain food. The only objection to sprouted grain is the difficulty of sprouting it, and that is overcome by using an Economy Oat Sprouter.

Oats are the best grain for sprouting for the reason that they sprout much more quickly than other grains. The oats must be good, for much of the common feed oats on the market germinate very poorly, and are worthless for sprouting.

Some prefer short sprouts, which are produced in the shortest time and furnish the most valuable predigested food. Others prefer long sprouts, furnishing more green food.

If short sprouts are required the trays may be filled full, but if long sprouts are desired the trays should not be filled more than three-quarters full.

The oats should be soaked in cold water twelve to twenty-four hours before being placed in the sprouter. A bucket of sprouting oats should be at hand to fill the trays as fast as they are emptied.

The trays should be filled in rotation to supply the required quantity of sprouts of the desired length each day.

The water pan at bottom of sprouter should be kept one-half to two-thirds full of water. The heat from the lamp acting on the water causes humidity in the oat chamber. If the grain becomes dry, which is liable to happen, especially in the upper trays, sprinkle it with lukewarm water.

The thermometer should be kept in the top tray. A temperature of about seventy-five degrees will give best results.

The sprouter should be located in a protected place, away from wind and draughts, and, if possible, where the sun will shine upon it all day. The lamp may be turned out during warm days.

The sprouter may be used to sprout other grains in the same manner, but a longer time will be required to produce sprouts.

LILLY'S ECONOMY OAT SROUTER Supplies the Best Green Food

This is the simplest and most practical sprouter for all kinds of grain. It is strong, durable, neatly made, economical, and will produce sprouts in the shortest possible time.

To meet the requirements of any size flock from a dozen to seven hundred and fifty birds, or for those who expect to increase their flocks, it is made in sections, and may be added to as occasion demands.

Each section contains five trays, and one section is ample to supply seventy-five birds when giving a full sprout, or one hundred and fifty birds when giving a short sprout. Four extra sections may be added as shown above.

Economy Oat Sprouter with Five Trays, Lamp and Thermometer. Weight 70 lbs.-----\$9.50
Extra Sections with five trays, 25 lbs.----- 3.00

Upper Notch
for Food

Lower Notch
for water

Combination Chick Server For Food or Water

Of all the various styles of chick servers, this is the only one that we know of that will serve both food and water satisfactorily. The reservoir is set in the lower notch for water. When set in the upper notch it will serve any kind of dry food from fine meal to whole grain. This server is complete. No glass jar to be supplied additional.

No. 1006. Two, 40c; Six, \$1.00; Dozen, \$2.00; postpaid.

Feed bills will be reduced by providing proper feeding utensils. They are cheaper than food.

LILLY'S Dry Mash Hopper

This hopper is for use with the dry mash system of feeding, and is to be filled with any dry food and hung or stood where the fowls will have access to it at all times. It holds about thirty pounds of dry mash food, only a small portion of which is exposed, the balance becoming accessible as required.

It is made of heavy galvanized iron, with an inclined back which forces the food forward and prevents clogging, and it has a bib, or apron, which prevents any waste. This system of feeding is a great convenience and saver of labor, and this hopper will pay for itself in a very short time by eliminating waste. Weight, $5\frac{1}{2}$ lbs.

No. 1008, Dry Mash Hopper, \$1.00 each, \$10.00 per dozen.

LILLY'S Wall Founts

Cleanliness is a very important matter in the poultry business, and clean, cool water is essential. It is difficult for dirt to enter this, the most popular style of water fount. The back is flattened so that it will hang flat against the wall, or it may be stood on the ground. It is easily cleaned by placing gravel and water in it and shaking it. Made of heavy galvanized iron. The small sizes are for chicks and pigeons.

No. 1210, One Quart.	Weight $\frac{1}{2}$ lb.	30c ea.; \$3.00 doz.
No. 1212, Two Quart.	Weight 1 lb.	40c ea.; \$4.00 doz.
No. 1040, Four Quart.	Weight $1\frac{3}{4}$ lbs.	50c ea.; \$5.00 doz.
No. 1041, Eight Quart.	Weight $2\frac{3}{4}$ lbs.	60c ea.; \$6.00 doz.

LILLY'S Grit and Shell Hoppers

These hoppers are indispensable for feeding grit, shell, bone, meat scrap, charcoal, etc. They are well made of heavy galvanized iron, and with ordinary use will last for years. The larger size has two compartments and holds about fifteen pounds of feed. The smaller size has three compartments and holds about eight pounds of food.

No. 1009, Large. Weight $3\frac{1}{2}$ lbs., 80c ea.; \$8.00 doz.

No. 1042, Small. Weight $2\frac{3}{4}$ lbs., 60c ea.; \$6.00 doz.

Two Piece Drink Founts

These founts are very convenient, sanitary and easy to clean. To fill, the reservoir is filled with water, the basin held in place, and the whole quickly inverted. Only a small quantity of water is exposed; the balance remaining in the reservoir where it is kept cool and clean.

The smaller sizes are generally used for young stock.

No. 1037, One Quart.	Weight $\frac{1}{2}$ lb.	30c ea.; \$3.00 doz.
No. 1038, Two Quart.	Weight 1 lb.	40c ea.; \$4.00 doz.
No. 1039, Four Quart.	Weight $1\frac{1}{2}$ lbs.	50c ea.; \$5.00 doz.
No. 1211, Eight Quart.	Weight $2\frac{3}{4}$ lbs.	60c ea.; \$6.00 doz.

LILLY'S Feed Trough

For feeding any kind of food to little chicks. The bars prevent getting their feet into the trough. The barred top is detachable, so that the trough is easily cleaned. Made of galvanized iron.

No. 1007. Weight $\frac{3}{4}$ lb., 35c ea.; \$3.50 doz.

HUMPHREY GREEN BONE CUTTER

Simplest and Easiest to Operate

THE HUMPHREY GREEN BONE CUTTERS are standard, and is sufficient to say that the Humphrey is the peer of any bone cutter are so well and favorably known that little introduction is necessary. It manufactured. The manufacturer's guarantee, backed by us, is so broad that the purchaser is fully protected.

To get these machines at the minimum cost, we have purchased an immense quantity, and to avoid carrying any over to next season we have greatly reduced the prices. These prices will apply only until this lot of machines is sold.

We will mail you Humphrey's catalog if you wish it.

No. 1. Hand power. The size in most general use. Hopper 4½x5 inches. Four knives. Weight 120 lbs. \$12.00

No. 2. Small power machine. Same as No. 1 less hand wheel, but with 12x2½-inch Tight Pulley. Weight 120 lbs. \$13.50

No. 2½. Combined hand and power. Same as No. 1 and No. 2, including both Hand Wheel and Tight Pulley. Weight 135 lbs. \$15.00

No. 3. Direct power. Tight and Loose Pulleys, 18x4 inches. Cutter head 12 inches. Weight 240 lbs. \$30.00

No. 4. Geared power. Back geared. Tight and Loose Pulleys 12x3 inches. Requires 2 to 4 h. p. Weight 240 lbs. \$35.00

HUMPHREY WONDER GRIST MILL

The Wonder Grist Mill will crack or grind, either coarse or fine, any grain, cake, spices or anything that can be ground by the larger and more expensive mills, and do it easily and satisfactorily. It will grind grain fine enough for table use, or will crack it for poultry food.

It may be operated either by hand or with power. One-half to one horsepower is sufficient. Capacity two to seven bushels per hour. Weight 55 lbs.

Price: Hand Mill, \$8.00; Combined Hand and Power, \$9.00.

Humphrey Bone and Shell Mill

A useful machine to have around the house or ranch for cracking small quantities of grain or grinding dry bone, shell, charcoal, etc., for poultry food. The grinding parts are made of hard white iron, and will last for years. Shipping weight 32 lbs.

Price \$4.00

Humphrey Clover Cutter

Every poultryman should have a Humphrey Clover Cutter for cutting clover and alfalfa for poultry. Green food is necessary, and is also cheap food. With this machine the cuttings are so small and uniform that there is virtually no waste. Made in two styles.

Stand Clover Cutter, with legs, like cut. Weight 105 lbs. \$12.50
Bench Clover Cutter, with short legs. Weight 85 lbs. 10.50

Humphrey Grit Mortar

A heavy cast-iron mortar for crushing granite, limestone or boulders to the correct size for poultry grit. Has perforated bottom. Nine inches high, eleven inches in diameter. Shipping weight 40 lbs.

Price \$3.50

Johnson Grit Crusher

A powerful little crusher which will easily crush shell, rock, etc. If the rocks are too hard, heat them and throw cold water on them. Shipping weight 24 lbs.

Price \$4.00

LILLY'S LIVE CHICK BOXES

For Shipping Chicks by Express

THOSE who have shipped baby chicks know the importance of a good package. We have a chick box, made especially to our order, which we believe is superior to any previously offered. By having them made in immense quantities, we are able to offer them at prices less than is usual for inferior boxes.

They are made of corrugated strawboard of unusual thickness and quality, protecting the chicks against changes in temperature. Others are made with thin single-play strawboard covers; ours have heavy corrugated strawboard covers, affording better protection. They are properly ventilated, and chicks may be shipped in them any reasonable distance in any kind of weather. They fold flat when not in use.

		1	2	Doz.	6 Doz.	Gross
No. 1081.	25 Chick Size	\$.15	\$.25	\$1.10	\$6.00	\$10.20
No. 1082.	50 Chick Size	.20	.35	2.00	10.50	18.00
No. 1083.	100 Chick Size	.30	.50	2.50	13.50	24.00

LILLY'S EGG SHIPPING BOXES

For Shipping Fancy Eggs by Express or Parcel Post

NO OTHER egg shipping box affords such complete protection for high priced eggs for hatching. They not only meet all requirements of the Parcel Post Law, but also insure safe transportation of eggs. One feature of superiority is the half-inch air space between the eggs and sides of the boxes, protecting them effectually against rough handling, cold and heat. Another feature is the thick corrugated partitions above and below the eggs, giving them additional protection.

With these boxes, hatching eggs may be shipped to any place at any season with entire safety. The boxes fold flat when not in use, and may be used repeatedly. A label for name and address accompanies each box.

		1	2	Doz.	6 Doz.	Gross
No. 1012.	15 Egg Size	\$.15	\$.25	\$1.35	\$7.50	\$13.20
No. 1013.	30 Egg Size	.20	.35	2.10	11.10	20.40
No. 1084.	50 Egg Size	.30	.50	2.65	14.40	27.00

EYRIE SHIPPING COOP

For Safe Shipment of Fancy Poultry

THE MOST GENERALLY used of all shipping coops for show and breeding birds. It is made in three parts; the top and bottom of wood, and the body of heavy corrugated strawboard in one piece, making a very strong, durable, light and practical shipping coop, and insuring protection against rough handling, draughts, etc.

It folds flat when not in use, making it convenient to store, and minimizing express charges when returned empty.

		Each.	Doz.
No. 1014-C.	12x22x22. For one large or two small birds, weight 6½ lbs. ..	\$.60	\$6.10
No. 1015-D.	20x22x22. For two large birds. Weight 10 lbs.	.85	8.40

SHIP DIRECT TO THE CONSUMER

PEOPLE IN THE CITIES are anxious to purchase fresh produce direct from the producers, and of course the producers are glad to have the profits otherwise had by the middlemen. The Parcel Post makes this possible and convenient, but many have not been able to profit by it on account of the restrictions in regard to packages required.

We have procured a line of corrugated fibre boxes which meet all requirements of the Parcel Post, and

in which eggs, dressed poultry, garden truck, etc., may be mailed direct to the consumer safely and in an attractive manner that will bring highest prices. By purchasing in very large quantities we are able to make prices which make these boxes the cheapest as well as the most attractive package. They are made in a variety of shapes and sizes, adapting them for any kind of produce.

PARCEL POST EGG BOXES

For Mailing Market Eggs

AN EXCEEDINGLY STRONG corrugated fibre box for the safe transportation of market eggs by Parcel Post. The package is so constructed that each egg is separated by corrugated board, and the entire contents are surrounded by a double wall of air-cushioned corrugated board.

They are made in five sizes, fold flat when not in use, and are very light, reducing postage to the minimum.

	Capacity	Dimensions	Packed in bundles of	Weight per Bdl.	1 Doz.	2 Doz.	Gross
No. 1100.	One Dozen Eggs	$7\frac{5}{8} \times 5\frac{5}{8} \times 2\frac{5}{8}$	Two Dozen	$9\frac{1}{2}$ lbs.		\$1.00	\$5.65
No. 1101.	Two Dozen Eggs	$7\frac{5}{8} \times 5\frac{5}{8} \times 5\frac{1}{4}$	Two Dozen	$18\frac{3}{4}$ lbs.		1.60	8.90
No. 1102.	Three Dozen Eggs	$7\frac{5}{8} \times 5\frac{5}{8} \times 8$	Two Dozen	25 lbs.		2.15	11.85
No. 1103.	Four Dozen Eggs	$11\frac{1}{2} \times 7\frac{5}{8} \times 5\frac{1}{4}$	One Dozen	$32\frac{3}{4}$ lbs.	\$1.35		14.95
No. 1104.	Five Dozen Eggs	$9\frac{1}{2} \times 7\frac{5}{8} \times 8$	One Dozen	38 lbs.	1.55		17.20

These boxes can be furnished in full bundles only, as shown above.

CORRUGATED BOXES FOR PARCEL POST

For Mailing All Kinds of Produce

THE STRENGTH and durability of these corrugated boxes, combined with their light weight, makes them suitable for the shipment of all farm and garden produce by Parcel Post. Perishable articles, such as fresh meat, dressed poultry, fruits, vegetables, etc., will be accepted in these boxes

for local delivery without additional wrapping; or, when wrapped, they will be accepted for delivery in the first zone. Articles which do not decay quickly will be accepted in these boxes, without wrapping, for all zones.

	Dimensions	Weight	Per Doz.	of 25	of 50
No. 1105	$10 \times 8 \times 4$	$\frac{1}{2}$ lb. each; 25 lbs. per bdl. of 50	\$0.60		\$1.70
No. 1106.	$10 \times 8 \times 8$	$\frac{3}{4}$ lb. each; $38\frac{1}{2}$ lbs. per bdl. of 50	.85		2.60
No. 1107.	$14 \times 6 \times 6$	$\frac{3}{4}$ lb. each; 37 lbs. per bdl. of 50	.85		2.50
No. 1108.	$14 \times 6 \times 10$	1 lb. each; $26\frac{3}{4}$ lbs. per bdl. of 25	1.20	\$1.80	

These boxes cannot be furnished in lots of less than one dozen of one kind.

NORTHWESTERN EGG BOX

For Market Eggs

THE NORTHWESTERN is the strongest and best market egg box made, and is not to be confused with the cheap, flimsy carton commonly used. It is for delivering eggs to market and to local customers in a convenient and attractive manner, and is not for shipping by Parcel Post or Express.

It is made of one piece of cardboard, with fillers, and folds flat when not in use. Weight: Dozen, $13\frac{3}{4}$ lbs.; 100, $133\frac{3}{4}$ lbs.
No. 1016. Dozen, 15c. 100, \$1.00; 500, \$3.50; 1,000, \$6.50.

Write for special prices on large quantities.

DOUBLE CLINCH LEG BANDS

One of the most popular bands on the market. Made of aluminum. Has an exceptionally strong fastening, consisting of two clinches which close down over the end of the band. Be sure to state size wanted. In packages of 25 and 100 only.

No. 1206, Double Clinch Leg Bands No. 1 Pigeon, No. 2 Pigeon, No. 1, 2, 3, 4, 5 or 6; 25, 30c; 100, 75c; postpaid.

SMITH SEALED LEG BANDS

The best leg band made. It is fastened with a soft rivet, and cannot be removed without being destroyed. No two bands are manufactured bearing the same number. Be sure to state size wanted when ordering. Not made in pigeon sizes. Must be applied with the No. 1021 Plier.

No. 1020, Smith Sealed Leg Bands No. 1, 2, 3, 4, 5, or 6; 25, 35c; 100 (one size), \$1.25; postpaid. No. 1021, Sealing Plier for sealing Smith Sealed Leg Bands 50c, postpaid.

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LEADER LEG BANDS

These can be adjusted to any size required, are fastened very securely and are made of aluminum. To apply, the end is cut off to the correct length and they are then adjusted as shown in above cut. Made in two sizes; No. 1 for small hens; No. 2 for males, large hens, ducks, geese and turkeys. In packages of 25 and 100 only.

No. 1205, Leader Adjustable Leg Bands No. 1 or No. 2; 25, 30c; 100, 75c; postpaid.

Climax Leg Bands

The original spring wire and clasp leg band. The spring-brass rings are so bent that the tag acts as a clasp. Especially useful for hens with feathered legs. Six sizes, same as Smith Sealed.

No. 1024, Climax Leg Bands, any size; 25, 25c; 100, 60c; postpaid.

Reliable Poultry Punch

For marking little chicks until they are old enough to be banded.

Makes a clean cut. Lever is self-opening.

No. 1023. 25c, postpaid.

Open Chick Leg Bands

Used as temporary bands on little chicks until they are large enough to be properly banded. Made of aluminum. Sizes No. 1 for small chicks; No. 2 for large chicks. In packages of 25 and 100 only.

No. 1090, Open Chick Leg Bands No. 1 or No. 2; 25, 25c; 100, 60c; postpaid.

Seamless Pigeon Leg Bands

A solid aluminum band to be applied on squabs by inserting the foot through the ring. Cannot be applied on adult pigeons. One size only.

No. 1091, Seamless Pigeon Bands; 25, 30c; 100, 75c.

Petty's Poultry Punch

The handiest little punch yet devised for marking little chicks by punching various arrangements of holes between the toes. It is light, strong, cuts clean and fits between the chick's toes without bruising. Made of fine steel, well nickled.

No. 1022. Petty's Poultry Punch, 25c, postpaid.

When ordering, don't forget to state size of leg bands wanted.

Double Clinch Leg Bands are made in eight sizes, as follows: No. 1, pigeon, for Small Pigeons; No. 2, Pigeon, for Large Pigeons; No. 1, for Bantams; No. 2 for Leghorns, Anconas, Hamburgs and Andalusians; No. 3, for Minorcas, Games, Wyandottes and Rhode Island Reds; No. 4, for Plymouth Rocks, Orpingtons, Dorkings and Ducks; No. 5, for Brahmas and Cochins; and No. 6, for Turkeys and Geese. Males require one size larger.

Smith Sealed and Climax Leg Bands are made in the same sizes except that there are no Pigeon Sizes.

Caponizing

A Simple and Highly Profitable Operation

CAPONIZING is being more extensively practiced by Northwestern poultrymen each year, and a good market for capons is being developed in this section. Our markets as yet do not pay as good prices as some of the best eastern markets, but good capons will bring about fifty per cent more

per pound than cockrels, and when we consider that the weight can easily be nearly doubled it will be seen that there is a good profit in caponizing. The operation, after a little practice, is not at all difficult. Complete information is included with each set of instruments which we furnish.

Pilling Special Caponizing Set

An improved set of instruments which has been made to meet the demands of the operator who caponizes large numbers of birds. The improved forceps, or testicle spoon, allows for great speed in operating.

The set includes Cutting Knife, Spreader, Forceps, Film Hook, Pliers, Probe and Cords with Hooks. The instruments are splendidly finished and are equal to any surgical instruments.

Complete instructions and information in regard to caponizing are included with each set of instruments.

No. 1025. Special Caponizing Set. \$4.00, postpaid

Pilling Farmer's Caponizing Set

This set is very popular among farmers and small poultry keepers. The set consists of Cutting Knife, Spreader, Film Hook, Testicle Spoon, Probe and Cords with Hooks for holding cockerels during the operation. The instruments are made of the finest steel, heavily nicked and finished in a first-class manner. A book of complete instructions and information is included with each set of instruments.

No. 1026. Farmer Caponizing Set. \$2.75, postpaid

Pilling Angular Killing Knife

This knife has an angle point, enabling the operator, by simply turning the wrist, to sever the jugular vein and spinal cord, thereby bleeding the fowl thoroughly without severing the head.

No. 1004. Angular Killing Knife. 50c, postpaid

Baby Chicks

Supplied From First Class Utility Stock

As many of our customers are not in position to hatch their own chicks, and have had difficulty in purchasing chicks which they could depend upon, we have for several years supplied White Leghorn baby chicks with entire satisfaction to both our customers and ourselves.

At the time of going to press, the poultry business is so unsettled that we have not been able to arrange for a satisfactory supply of chicks for the coming season. However, we will probably be able to furnish at least a limited number of White Leghorn chicks, and possibly some other varieties, or refer our customers to breeders who can supply them.

Those desiring baby chicks will please take the matter up with us at least one month before the chicks are to be delivered. We will then quote lowest possible prices and advise date that we can make delivery.

They will be shipped by express, in our live chick boxes, and we guarantee delivery in good condition at any express office that can be reached within forty-eight hours.

We cannot furnish chicks in lots of less than one hundred.

Holly Chick Food and High Protein Chick Mash makes it easy to raise sturdy chicks.

LILLY'S STOCK FOODS AND REMEDIES

LILLY'S BUT-ER-FAT FEED

Produces the Greatest Amount of Milk at Least Cost

BUT-ER-FAT is a high-grade dairy food made for heavy milk production, and is intended for that purpose solely. It is manufactured from

ground grains, beans, peas and oil cake meal and contains no waste or low-grade materials whatever. Its food values are exceedingly high.

In addition to being higher in protein and carbohydrates and lower in fiber than any of the other foods usually fed for milk production, it is a correctly balanced ration for that purpose, which means that there is no waste, and all of the food is made use of.

This is more important than some will realize, for certain materials might show an exceedingly high analysis, but, being incorrectly balanced, be of little value as dairy foods. An excess of any element is not only wasted, but is also detrimental.

But-er-fat completely takes the place of the usual meal and grain feed, giving greater results at less cost. It must not be confused in any

way with the low-grade dairy foods that are manufactured for the sole purpose of supplying a cheap food without regard to results.

Many persons, especially those with but a few cows, feed only bran or shorts and hay without considering food values. Bran and shorts are expensive foods.

The quantity of But-er-fat to be fed for best results will, of course, vary considerably with conditions and the kind of stock. No radical change in food should be made suddenly, and we would recommend starting with a small quantity, two or three pounds, in conjunction with the other food which the cow has been getting, gradually increasing the But-er-fat and decreasing the other grain food until each day's ration will consist of eight to twelve pounds of But-er-fat, together with the usual hay, silage or pasture.

For heavy milk yield, milk producing elements must be supplied in sufficient quantities.

For sale by dealers or supplied by us direct.

Price, \$1.90 per 100 lbs. F. O. B. Seattle or Portland. Write for price on ton lots.

LILLY'S ALFALFA MEAL

Lilly's Alfalfa Meal is prepared especially for us from best grade alfalfa, kiln dried and ground to a coarse meal. It is very high in protein, about the same as bran, and is a splendid adjunct to the grain food. It may be fed dry or moistened with water,

but best results will be obtained by scalding it with boiling water, covering it with a blanket and allowing it to steam for several hours, when it will become practically a green food. But-er-fat or other meal food may be mixed with it to good advantage.

Price, \$1.20 per 100 lbs. F. O. B. Seattle or Portland. Write for price on ton lots.

Prices shown in this catalog are subject to change. Write for Supplementary Price List before ordering.

LILLY'S CALF MEAL

A COOKED AND BALANCED FOOD FOR CALVES

Equivalent to Whole Milk at a Fraction of the Cost

CALF MEAL makes it profitable for the dairyman to raise calves instead of killing them at birth, as is too commonly done. It does not

pay to raise calves on whole milk, but by feeding Calf Meal they can be raised at a cost less than one-third that of raising them on whole milk.

The dairyman, to insure success, must raise his own cows from stock which has proved its worth, rather than buy cows at exorbitant prices and take chances on their proving dear at any price.

Calves eat Lilly's Calf Meal with great relish, and thrive upon it even better than upon whole milk. If fed in a sanitary manner they will not be troubled with scours or constipation, most serious difficulties when feeding milk.

Lilly's Calf Meal is made from the best materials, correctly blended, thoroughly cooked, and the food value is practically the same as whole milk; 25% to 27% protein, 45% to 50% carbohydrates. One pound of Lilly's Calf Meal makes one gallon of milk substitute fully equal to whole milk for raising calves.

The use of Calf Meal has become very general and is increasing rapidly. We have handled many carloads of it each year, but until recently it has been imported from the east. Although the eastern product is a good food and perfectly satisfactory in every other way, high freight rates made the cost almost prohibitive, and it could not always be supplied in perfectly fresh condition.

We have experimented and tested various compounds for many years, so that we know how to make a Calf Meal fully equal to the best.

In our new plant we have installed a complete equipment of special machinery and cookers for grinding, mixing, blending, and cooking Calf Meal thoroughly uniformly and economically. The result is that we are able to offer the dairyman a Calf Meal of the very highest quality at a greatly reduced price.

The preparing and feeding of Calf Meal is a simple matter, and properly raising calves on Calf Meal is not nearly so annoying as some may suppose.

Teaching the calf to eat is not at all difficult, especially if it has not been allowed access to the cow. Be gentle and patient; coax the calf to drink; do not try to force it.

Place three fingers in the calf's mouth, lower them into the food and gradually withdraw them when the calf is drinking freely. This will have to be repeated only a few times.

During the first five days the calf should be fed its mother's milk only and should have about one quart four times each day, gradually increasing to two quarts at the end of the fifth day.

After the calf is five days old add about two tablespoonfuls of Lilly's Calf Meal to the milk at each feed, gradually increasing the Calf Meal and decreasing the milk so that at the time the calf is two weeks old each of the four feeds per day will consist of about one-half pint ($\frac{1}{2}$ lb.) of Calf Meal, one quart of whole milk and one quart of boiling

water.

Continue to decrease the quantity of milk and increase the Calf Meal until when the calf is four weeks old each feed, which may have been reduced to three per day, will consist of about one pint of Calf Meal and three pints of boiling water, the milk having been eliminated.

This feed should be continued until the calf is three months old, or more, according to the supply of other foods and its ability to thrive upon them.

The Calf Meal should first be scalded with boiling water, stirring to keep it smooth and free from lumps, and then the required amount of boiling water added.

It should be fed at as nearly blood heat (98 degrees) as possible. If skim milk is fed instead of whole milk, increase the quantity, and be

sure that it is perfectly sweet.

Fresh water and a lump of rock salt should be supplied from the start.

FOR SALE BY DEALERS OR SUPPLIED BY US DIRECT.

25 lbs., \$1.00; 50 lbs., \$1.85; 100 lbs., \$3.50; F. O. B. Seattle or Portland.

For further information, write for a copy of **LILLY'S** Calf Meal Booklet.

LILLY'S DIGESTER TANKAGE

An Economical and Beneficial Adjunct to the Ration for Hogs

THE use of packing house by-products as a partial ration for hogs has been given severe and varied tests by practically all experiment stations in hog raising sections of the United States. The unanimous conclusion is that when judiciously fed it is a very satisfactory food. Being very high in concentrates, it must always be considered in conjunction with other foodstuffs such as bran, shorts, corn meal, etc.

Digester Tankage, the trade name of this product, may be fed either dry or in slop form, alone or mixed with other food. A favorite method is to feed it alone in a trough just before giving other feed.

Price: \$3.00 per 100 lbs.; \$55.00 per

ton; The amount to be fed will vary from one-quarter to one pound per animal per day, according to age and size. Some hogs will not take readily to the new food for a day or two, but when used to it will be quite eager for it. Digester Tankage will help brood sows to produce healthy pigs, will benefit the youngsters at weaning time, and it is an economical pork producer.

Lilly's Digester Tankage is first class in every way, and contains only the best of the products usually used for this purpose. It is sold under state law guarantee, and each sack bears analysis of food values contained therein.

LILLY'S Oil Cake Meal

Oil Cake Meal, in addition to having high food values, acts as a digester and conditioner. It makes a sleek coat, is slightly laxative, and gives tone to farm animals and birds.

Care must be exercised in feeding it. One-quarter pound per day each for hogs, or one pound per day for cattle or horses, is sufficient.

It is excellent for all animals during pregnancy, and should be fed a considerable time before and after parturition. It is beneficial to young pigs at weaning time, and will avoid constipation.

Price: \$2.25 per 100 lbs.; \$40.00 per ton.

LILLY'S Soy Bean Meal

Soy Bean Meal has become almost a staple food on the Pacific Coast. The food value is high compared with the cost. It is a good food for practically all farm animals and birds, and may form ten to twenty per cent of the ration. It is especially valuable for

Price (subject to change); 100 lbs., \$2.00;

LILLY'S Barley Meal

Each year the dairymen and hog raisers of the Northwest are appreciating more fully the value of barley meal both as a producer of milk and a flesh former. To cows it should be fed in conjunction with bran, shorts or meal, and may constitute twenty-five per cent of the ration.

To hogs it may be fed as a slop, preferably with skim milk, or mixed with other food. It is one of the very best foods for fattening hogs.

Lilly's Barley Meal is ground very fine, making it more available, and consequently more valuable.

Price: \$2.00 per 100 lbs. Write for ton price.

dairy cows, hogs, horses and poultry.

Our facilities for supplying this material are excellent. We purchase the cake in immense quantities and have a complete equipment for grinding it, enabling us to supply it at a reasonable price.

ton, \$37.00; F. O. B. Seattle or Portland.

Prices shown in this catalog are subject to change. Current Price List will be mailed on request.

LILLY'S

FLY LIQUID

Comfort For Stock - Profit For The Owner

IF DAIRYMEN could realize the enormous losses caused by flies they would exert every effort to exterminate the pests. Nothing is more loathsome and filthy than the common fly; nothing is sacred to his germ-laden feet and antennae.

Even the most tender hearted will have no regrets for the destruction of the fly, for no one has been able to discover any service that it has rendered mankind. He unmercifully robs the dairymen of a great amount of money, for cows cannot secrete milk, and beef stock cannot put on flesh while fighting flies.

Horses and other stock are less efficient and it costs more to keep them in condition when annoyed by flies. They are a nuisance to the housewife, and much sickness may be traced directly to them.

Most of the fly troubles can be overcome by the use of Lilly's Fly Liquid. If sprayed on cows and other stock once or twice a day, flies will not annoy them. By spraying screens, stable floors, manure piles, garbage cans, and other places where flies congregate, they will be eliminated and breeding curtailed.

Lilly's Fly Liquid is easily applied with one of the inexpensive hand sprayers, Holly or Brandt Continuous, listed in Spray Section of this catalog. In the absence of a suitable sprayer it may be rubbed on with a cloth. The liquid is ready to use, and is not to be diluted. May be shipped by parcel post.

Price: Quart, 35c; Gallon, \$1.00; Five Gallons, \$3.50; F. O. B. Seattle or Portland.

LILLY'S BOVENA

Alfalfa and Molasses Dairy Food

Bovena is manufactured from high-grade alfalfa meal, which goes through a special process of drying and curing, blended with molasses under heat.

It is a very excellent dairy food for milk production, and is especially valuable during the dry and winter months, when pasture is scarce. It will keep indefinitely, is very palatable and is relished by stock.

When starting to feed Bovena, it is well to begin with a small amount, 4 to 5 lbs. per day, and increase to 8 to 12 lbs. per day. This is in addition to Lilly's But-er-fat Feed and the regular hay, silage or pasture.

A small quantity of Bovena, fed in conjunction with the regular ration, is splendid for horses.

Price: \$1.35 per 100 lbs.; \$25.00 per ton;
F. O. B. Seattle or Portland.

Prices subject to change. See current price list.

LILLY'S PIG MEAL

Keeps Pigs Growing Without Check At Weaning Time

Weaning time for little pigs is oftentimes their undoing. This is not to be wondered at when we consider the drastic change that usually takes place at that period. From a diet of mother's milk to the foods commonly supplied is a too radical change for the little fellows.

Lilly's Pig Meal is a perfect substitute for sow's milk, it is appetizing and pigs like it, and they will thrive upon it and continue to grow without any check. It is prepared to produce rapid growth of bone, muscle, tendon and blood, and to carry the pigs through the critical stage between weaning time and the time they can thrive on the regular foods without any set-back.

One pound of Lilly's Pig Meal will make one gallon of milk substitute. Mix the Pig Meal with a small quantity of boiling water, stirring to keep it free from lumps, then add skim milk or hot water at the rate of one gallon to each pound of Pig Meal. It should always be fed at a temperature of as near 98 degrees as possible.

Feed as much as the pigs will eat greedily, or enough to keep them in good growing condition. Commence feeding a little before the sow is ready to wean the pigs, and continue until they are able to thrive on other foods, reducing the quantity gradually at the end. Keep pens and feed troughs perfectly clean. Don't let the pigs stop growing for an instant.

25 lbs., \$1.00; 50 lbs., \$1.85; 100 lbs., \$3.50;
F. O. B. Seattle or Portland.

Grow Thousand Headed Kale for winter feed for cattle and poultry. We can furnish the seed.

LILLY'S COW CONDITIONER

A Regulator for Cattle

A TONIC and regulator which keeps the cow in perfect physical condition; reducing to the minimum the percentage of undigested food, from which the cow receives no benefit. It is prepared for cattle only, is not a cure-all and should not be given to other stock.

By improving the health and vitality of the cow, the milk yield is increased and such ailments as abortion, barrenness, milk fever, retained afterbirth, scours, etc., are prevented.

It is equally valuable for calves, making them vigorous, strong and healthy; will put vim in the bull, and will aid in fattening beef stock.

If you are not entirely satisfied with the results we will refund your money.

Price: Small Carton (about 1½ lbs.), 25c; Large Carton (about 3½ lbs.), 50c; F. O. B. Seattle or Portland.

LILLY'S STOCK TONE

For Horses, Hogs and Sheep

THE USE of a stock tonic is not to be considered drugging. It is to take the place of herbs and medicinal properties that would be obtained in the pasture if they were allowed to graze naturally. Under the unnatural conditions in which stock is usually kept a regulator is quite essential.

Two tablespoonfuls of Lilly's Stock Tone each day will keep a horse in perfect health, acting as a preventive against disease. When the horse needs toning up, a few doses will give him new life, tone up the system, carry off the waste matter, promote healthy secretion, regulate the kidneys, give him a glossy coat and bright eyes, and put vim into him. It is especially valuable for hogs and sheep, and by keeping good condition will prevent disease and lessen the cost of fattening.

Price: Small Carton (about 1½ lbs.), 25c; Large Carton (about 3½ lbs.), 50c. F. O. B. Seattle or Portland.

LILLY'S GERM DESTROYER

Recommended for the destruction of germs in any form, and as a general disinfectant. It may be used for cuts, sores, castrations, mange, in sick rooms, closets, pig-pens, to kill bedbugs; in fact any place where a disinfectant or sanitary and healthy wash is required.

It is highly concentrated, and one bottle will make eight gallons of solution.

Price: 8-oz. bottle, 25c.

If sent by parcel post, postage will be additional.

GROUND FLAX SEED

One of the best laxatives for all kinds of stock and poultry. This is pure flax seed, ground, containing all the oil. Four to eight ounces two or three times a week is sufficient to keep a horse's bowels in good condition; more may be required in some cases; other stock in proportion.

100 lbs., \$6.00. Less than sack lots 7c per lb.

F. O. B. Seattle or Portland.

Prices subject to change.

LILLY'S WORM POWDER

Worms are very prevalent among all stock, especially colts, lambs and pigs, and greatly impair the health, making them liable contract serious diseases.

Lilly's Worm Powders will effectually expel worms from all animals.

Price: 1¼-lb. carton, 50c, postpaid.

LILLY'S GALL REMEDY

This is a guaranteed remedy for galled shoulders and backs on horses.

Price: 25c, postpaid.

White Rock Hoof Packing

Nature's own product for the preservation of horses' hoofs. A natural rock, just as it comes from the mines. It is strongly antiseptic, will absorb many times its own weight in water and will hold moisture for months.

2 lbs., 15c; 25 lbs., \$1.00; 100 lbs., \$4.00.
F. O. B. Seattle or Portland.

Calf Meal makes it possible to raise good calves at small expense. Write for booklet.

LILLY'S

SPRAY MATERIALS AND APPLIANCES

How and When to Spray for Best Results

IT IS UNNECESSARY for us to dwell upon the necessity of spraying, for all progressive fruit-growers know that fruit cannot be grown profitably without spraying. The main thing is to know how to spray in a manner that will be most effective and with the least labor and expense. It does not pay to spray unless it is done carefully and at the correct time.

For the purpose of control, insects may be, in the main, divided into two classes, namely: those that exist by sucking the sap or juice from under the bark or skin, such as San Jose Scale, Oyster Shell Scale and Aphids. These must be controlled by a contact spray—a spray that acts upon the body of the insect. The other class is the biting or eating insects, such as the Codling Moth, Curculio and Caterpillars. These must be controlled with a poison.

It is not necessary to spray separately for each kind of insect; the group of same class can usually be controlled with one application. Thus, one without any specific knowledge of the various insects can be reasonably sure of being on the safe side by following the general rules as herein laid down and by using sprays of known effectiveness.

The two sprays of general use throughout all fruit growing districts in the United States and Canada are the Sulphur Sprays and Arsenical Sprays, with the Tobacco and Soap sprays in favor for certain things.

Next to insects, if not of equal importance, are the fungus diseases, such as Apple Scab, Anthracnose, Mildew, etc. Most of these can be controlled with the sulphur sprays—some with the Bordeaux Mixture.

Lime and Sulphur Solution was long found to be the best contact insecticide and fungicide. Now Soluble Sulphur Compound has come into general favor, being equally or more effective, more convenient, and cheaper.

Follow carefully each and every year the following schedule, and make such other applications as conditions seem to demand.

FIRST APPLICATION

On Apples, Pears, Plums, Prunes, Cherries, and Most Shrubs, Rose Bushes, Etc.

For Scales, Aphis Eggs, Leaf Blister Mite, Bud Moth and other insects, and for Scab, Mildew and other fungus, use Soluble Sulphur Compound at the rate of 20 pounds to 100 gallons of water at the time the buds are swelling in spring, or just before that time. If Scale is bad use 25 pounds to 100 gallons of water. If this application is made in fall, winter or very early spring, while all life is dormant and scales fortified by winter covering, the stronger solution should be used.

Never omit this application.

On Apples.

For all Scales, Aphis Eggs, Blister Mite, Mildew, and as the first and most important application for Scab, use 20 pounds of Soluble Sulphur Compound to 100 gallons of water when the buds are beginning to open, or up to the time that the leaves are as large as squirrel ears. If the leaves are slightly burned no damage is done as they will quickly recover.

If Bud Moth is present, this application will have to be made before buds open. For Scab control the later application is better.

Never omit this application. It is very important as a general clean-up. Its omission may be disastrous.

On Peaches and Apricots.

For Leaf Curl, Twig Borer or Peach Worm, Peach Blight, and Scales use 20 pounds Soluble Sulphur Compound to 100 gallons of water just before buds swell; not after buds open, except as determined by individual trial.

On Grapes and Berry Bushes.

For Mildew use 20 pounds Soluble Sulphur Compound to 100 gallons of water just before leaf buds open.

SECOND APPLICATION

On Apples and Pears.

For Scab and Mildew use 4 to 6 pounds Soluble Sulphur Compound to 100 gallons of water when the flower buds are "in the pink," or just before blooms open.

This and subsequent applications should be with a fine nozzle with sufficient force to make a good mist. Cover well, but do not drench.

THIRD APPLICATION

On Apples and Pears for Codling Moth and Scab.

This is the first application for Codling Moth, and should be applied as the last bloom petals are falling. Use 2 pounds of Electro Arsenate of Lead Powder to 100 gallons of water, to which may be added, if necessary, 2 pounds of Soluble Sulphur Compound. Always dissolve the Soluble Sulphur before putting in the Arsenate of Lead.

When in need of information in regard to spraying, write The Chas. H. Lilly Co., Spray Dept.

If the first and second applications of Soluble Sulphur have been thoroughly made, subsequent sprays for scab may not be necessary under certain favorable conditions and in some districts, but if conditions warrant it a light application should be made ten days after the first Arsenate of Lead spray, 2 pounds of Soluble Sulphur to 100 gallons of water. In some cases it may be advisable to repeat this later. In some districts and under certain climatic conditions, one or more applications after the fruit is formed is very important.

A second and third application of Arsenate of Lead Powder may be advisable to get the second brood of Codling Moth. The time to spray for control of Codling Moth should be determined by one familiar with the work. It is important to know when, and that can only be determined by one on the ground.

FALL SPRAYING

When Scale is very bad, a thorough drenching in fall, after leaves are off, with Soluble Sulphur Compound at the rate of 25 pounds to 100 gallons of water will be of great value; but do not let this spray take the place of the late spring spray, on account of the importance of the late spring spray for controlling Scab,

For Anthracnose or Black Spot Canker.

Immediately after the first fall rain, before fruit is picked, spray with Electro Bordo-Pulp, 12 pounds to 100 gallons of water, or a 4-4-50 Bordeaux Mixture; and again in thirty days with Electro Bordo-Pulp or a 6-6-50 Bordeaux Mixture.

INSECTS AND FUNGI

How to Know Them and How to Destroy Them

ANTHRACNOSE—BEAN

A fungus growth causing dark spots on pods, stems, leaves and seeds of beans. It is also known as Bean Rust and Bean Pod Spot. To prevent carrying it over in the seed, soak the seed in a solution of Electro Bordo-Pulp. Spray with Electro Bordo-Pulp, 6 pounds to 50 gallons of water, when the plants break through the ground; again when the first two leaves expand; and again when the pods have set.

ANTHRACNOSE—RASPBERRY

This fungus attacks the young canes of raspberries, blackberries and dewberries during June and July. The infected parts are circular and later oval in outline. The center is gray surrounded by a purple line. The areas are sunken. Cut and burn the infected canes. Spray, before leaf buds open in spring, with Soluble Sulphur Compound, 12½ pounds to 50 gallons of water; and in summer spray with Electro Bordo-Lead Mixture, 6 to 8 pounds to 50 gallons of water.

Soluble Sulphur Compound may prove valuable as a summer application. Its transparent character is much in its favor.

APHIS—BLACK

Shining black plant lice infesting the roots, twigs and leaves of peach and cherry trees. They are especially injurious on the roots, causing an enfeebled condition of the trees, and are difficult to destroy. Treatment same as for Woolly Aphis.

APHIS—GREEN

These small green lice infest fruit and ornamental trees and shrubs during the spring and early summer, sucking the sap and curling the leaves. The lice hatch early in spring from eggs which have remained on the trees during the winter. They increase very rapidly and there are several generations each season. They continue to breed until midsummer, when they leave the trees and migrate to grasses and plants. There they continue to breed until fall, when they return to the trees, where they lay small oval eggs on the twigs and buds.

Many of the eggs are destroyed by the regular Soluble Sulphur spring spray recommended on previous page. When insects appear, spray with Black Leaf 40, Lilly's Tobacco Extract, or other tobacco solution. Repeat as often as is necessary.

APHIS—WOOLLY

These appear as masses of white woolly substance under which will be found one or more small yellowish plant lice. They attack the limbs, trunks and roots of apple trees, and those on the roots are especially difficult to destroy. Their presence on roots is readily detected by the knotted appearance of the infested rootlets. They are especially liable to infest young trees, causing stunted and galled roots, and nursery stock so injured should never be planted.

Treatment for Woolly Aphis on the roots is difficult, and often ineffective. Remove as much of the soil from around the roots as can be done without injury to the tree, and spray thoroughly with Soluble Sulphur Compound, or Black Leaf 40 or other

GREEN APHIS. A, Wingless female; B, Winged male; both much enlarged. C, Natural size.

There are various forms of Arsenate of Lead; Electro Arsenate of Lead Powder is the best.

WOOLLY APHIS. A, Galls on rootlets; B, Wingless louse; C, Leg; D, Beak; E, Antenna. All enlarged except A.

tobacco solution. Also apply tobacco dust or tobacco stems liberally. Kainit applied around the roots is sometimes effective.

For the Woolly Aphis above ground, spray the same as for Green Aphis.

BALDWIN SPECK, OR FRUIT SPOT

Small deep red specks appearing on the surface of apples about the middle of August, becoming larger and turning brown as the fruit ripens. Under the spots the fruit is dry and brown. There is no known remedy.

BLIGHT—POTATO

Blight is especially prevalent during warm, damp weather. Grayish brown spots appear on the foliage, becoming hard and brittle, and the tubers stop growing. Do not confuse blight with Tip Burn, where the tips of the leaves dry and break off during hot, dry weather. Spray, soon after the plants are up, with Electro Bordo-Pulp, 6 or 7 pounds to 50 gallons of water. The fungicide is a preventive, not a cure, and where blight is prevalent it should be applied before the blight appears, and should be applied at frequent intervals. If Potato Beetles or Flea Beetles are present, combine poison with the fungicide by spraying with Electro Bordo-Lead Mixture, 8 to 10 pounds to 50 gallons of water.

BLIGHT—PEACH

Prune out dead twigs. Spray while dormant, before buds open in spring, with Soluble Sulphur Compound, 20 pounds to 100 gallons of water. Soluble Sulphur has been used with good effect as a summer spray, after fruit is formed, but we would advise summer applications only after testing the extent to which spray can be used with safety in the particular district affected.

BLISTER MITE

A small insect related to the Red Spider. They feed in the leaves of apple and pear trees, causing blisters which are first green, then red, and finally brown, causing the leaves to fall. During the winter the mites lie between the scales of the buds.

The regular spring spraying with Soluble Sulphur Compound will control them.

FLATHEAD BORER. A, Larva; B, Pupa; C, Front of Larva; D, Adult.

BORERS

There are several varieties of these larvae, attacking orchard and other trees, boring their way into the trunks of the trees, usually near the surface of the ground. Dig the worms out with a knife, or follow the holes with a flexible wire. Paint the trunks of the trees with Soluble Sulphur Compound, 10 to 15 pounds to 50 gallons of water, and cover with a thick coat of whitewash.

BROWN ROT, OR FRUIT MOLD

Affects blossoms and fruit of prune, plum, cherry and peach. It causes the blossoms to turn brown and dry. It affects the green fruit at any time, but causes greatest damage at harvest time. On the fruit it first appears as a small brown spot which rapidly enlarges and assumes a moldy appearance.

Until the Western Washington Experiment Station makes further tests on control of Brown Rot of Prune, we will advise the use of Soluble Sulphur Compound, 20 pounds to 100 gallons of water, just as leaf buds are coming out (the regular spring spray for scales). Spray again with Soluble Sulphur Compound, 4 pounds to 100 gallons of water, soon after the petals have fallen, to cover newly formed fruit, and repeat in ten days or two weeks, 3 pounds to 100 gallons of water.

BUD WORM, OR TWIG BORER

A small brown caterpillar, less than one-fifth of an inch long, with black head and legs, appears early in spring and begins depredations on apple, pear and peach trees mainly. When full grown it is about one-half inch long. It eats into the center of the buds, and when the leaves become larger it fastens some of them together, forming a tube within which it lives most of the time. After six or eight weeks it spins a cocoon within which it changes to pupa, and about ten days later it emerges as a moth. The moth resembles the Codling Moth, and is dark ashen gray with creamy-white blotches on the front wings, which expand about one-half inch. It deposits its eggs at night, one in a place, on the under side of the leaves. In about ten days the larvae is hatched, and begin feeding on the under side of the leaves near the midrib, where they construct silken nests within which they retreat when not feeding. In August they go from the leaves to the twigs, where they construct cocoons within which they pass the winter.

The regular spring Soluble Sulphur Compound spray will destroy many of the cocoons. Spray with Electro Arsenate of Lead Powder, 1 pound to 50 gallons of water, when buds are beginning to open.

CABBAGE WORM. A, Larva; B, Pupa or Chrysalis showing through thin silken cocoon.

CABBAGE WORM

A common white butterfly with black spots on the wings, which when extended measure about one and one-half inches, deposits eggs on the leaves of cabbage, cauliflower, kale and brussels sprouts. The worms are green, round, velvety, and when full grown are about one and one-quarter inches long. They are very destructive, and if not attended to promptly will completely destroy the plants.

Spray, as soon as the plants are set out, with Electro Arsenate of Lead Powder, one pound to 50 gallons of water, and repeat as frequently as is necessary.

Careful experiments have proven that there is no danger in eating cabbages which have been sprayed with Arsenate of Lead.

CANKER WORM

These are commonly called "measuring worms" on account of their peculiar method of traveling. They may often be seen suspended from the branches of trees by strands of silk. They eat the leaves of ornamental and fruit trees, especially apple trees, leaving only a network of veins. In a short time the worms crawl down the trees into the ground, where they change into the pupal state, emerging in the fall as moths. The male has large wings, while the female is wingless and of an ashy-gray color. The female crawls up the tree and deposits on the twigs and branches compact masses of a hundred or more small, cylindrical eggs. From these eggs the Canker or Measuring Worms are hatched about the time the leaves open in spring.

The regular spring spray with Soluble Sulphur Compound, 20 pounds to 100 gallons of water, will destroy many of the eggs, and the regular arsenate of Lead spray for Codling Moth will control the worms.

CUTWORMS

There are several varieties of cutworms, all of which are the larvae of night-flying moths; are rather thick, naked worms, three-quarters to one and one-quarter inches long, and are similar in habits. The eggs are deposited on the branches of trees and shrubs, the larvae descending to the ground in search of food as soon as hatched. Most of them feed upon grass or clover when young, becoming about half grown by winter, when they burrow into the ground. In spring they attack a variety of young plants, cutting off the stems just below the surface of the ground.

They are very destructive, and difficult to exterminate. There are three methods which have proved more or less effective.

Mix one pound Electro Arsenate of Lead Powder with five pounds of bran or middlings, and sweeten with sugar. Sprinkle this poisoned bait on the ground near the plants. Be careful to keep poultry and animals away from it.

Small pieces of boards may be laid on the ground and the worms will come to the surface under the boards, where they may be destroyed early in the morning.

When plants are found cut off, the worms may be dug out with the fingers, to prevent further depredations.

CODLING MOTH. A, Burrowings of Larvae; D, Larvae; F, Moth with wings closed; G, Moth with wings expanded; H, Head of Larvae; I, Cocoon killed by spraying.

CODLING MOTH

The greatest and most generally injurious insect pest among apples, pears and quinces, causing wormy fruit. There are two broods in a season. The first develops from pupae which have survived the winter in cocoons in protected places. A small, chocolate colored moth appears in spring, flying at night, and deposits its eggs, generally in the blossom end of the young fruit. From these eggs are hatched small worms which eat their way toward the core of the fruit. They increase in size until at the end of three or four weeks they are one-half inch or more in length. They then leave the fruit and find a crevice in the bark, or other protected place, where they spin cocoons in which they change to pupae. In about two weeks they emerge as moths, and these moths lay eggs for the second generation.

The regular fall and spring Soluble Sulphur spray will destroy many of the pupae in the cocoons. Spray with Electro Arsenate of Lead Powder when the last flower petals are falling, before the fruit turns downward; again about ten days later; and again, for the second brood, about six weeks after the first Arsenate of Lead spray.

The spray material is the least expensive part of spraying; use only the best.

FIRE BLIGHT

Affects apple, pear, plum and quince, and is caused by bacteria which is carried by insects, curculio, and the pruning knife. Leaves on affected limbs appear to have been scorched by fire. Prune out every sign of blight, cutting well below the disease. Dip the knife frequently in a solution of corrosive sublimate, 1 part to 1,000 parts water, and wash pruned surfaces with the same solution.

FLEA BEETLE

A small black beetle, about one-sixteenth of an inch long, which punctures the leaves of potato, tomato, tobacco, egg plant and pepper plants, encouraging the spores of blight to enter. Spray, when the insects appear, with Electro Bordo-Lead, 1 pound to 5 gallons of water.

LEAF HOPPER

A small, white, hopping plant louse. They suck the sap from the under side of the leaves of apple trees and grape vines, causing them to turn brown and dry up. Spray with Black Leaf 40 or other tobacco solution when the insects appear.

MILDEW

A very troublesome fungus disease on peach, apple, grape, currant, gooseberry, rose and other trees and plants. It has the appearance of white dust or mold on plants, leaves and flowers. To kill the spores, spray with Soluble Sulphur Compound, 10 pounds to 50 gallons of water, after most of the leaves have fallen in the fall, and again before buds open in spring. On the first appearance of the disease spray with Soluble Sulphur, summer strength, 1 pound to 50 gallons of water; or dust with dry powdered sulphur or Hammond's Grape Dust.

MOSS AND LICHENS

All fruit trees, small fruits, shade and ornamental trees and shrubbery are subject to these fungus diseases, and they are more destructive than most persons realize. The regular fall and spring Soluble Sulphur sprays will destroy the spores. In extreme cases scrape them off and wash affected parts with Soluble Sulphur Compound, 10 pounds to 50 gallons of water.

OYSTER SHELL SCALE. 1. Egg; 2. Larvae just hatched; 3. Larvae when forming scale; 4. Scale after second plate is formed; 5 and 6. Forms of louse taken from scale; 7. Fully formed scale. All greatly enlarged.

OYSTER SHELL SCALE

Small yellow lice are hatched in May and crawl about over the bark a few days until they find a suitable place to insert their beaks. There they increase in size and by the end of the season have formed small elongated scales, about one-eighth of an inch long, resembling miniature oyster shells.

This pest does not multiply so fast as the San Jose Scale, and therefore is not so serious, but when unchecked its work is equally as disastrous. It is more difficult to control by dormant sprays, but is quite easily controlled when the young are hatching by spraying with Soluble Sulphur Compound at the times recommended for the control of Scab. Follow directions as for apples and pears in first, second and third sprays for Scales and Scab.

PEACH LEAF CURL

A fungus disease causing the leaves of peach trees to curl, turn various shades of yellow and red, and to finally drop off. Spray, before buds open in spring, with Soluble Sulphur Compound, 10 pounds to 50 gallons of water.

PLANT LICE

Small lice infesting nearly all vegetation. The regular spring spraying with Soluble Sulphur Compound, 10 pounds to 50 gallons of water, will destroy many of the eggs. When the insects appear, spray with Lilly's Tobacco Extract, Black Leaf 40, or other tobacco solution.

These insects increase very rapidly, and it will probably be necessary to repeat the spray at frequent intervals.

RED SPIDER

Minute reddish mites operating on the under side of leaves of plants, mostly in greenhouses. Spray with Soluble Sulphur Compound, 3 pounds to 100 gallons of water, when the mites appear.

SAN JOSE SCALE

San Jose Scale is a minute yellow insect, related to the Oyster Shell

As much depends upon spraying at the right time as upon using the correct spray.

SAN JOSE SCALE. Showing the mature winter scale; also the insect itself, with its threadlike feeding organs.

Scale, but easily distinguished by the dark colored circular scale under which they lie. The scales are about the size of a pin-head, and at the center of each scale is a small, round, black or yellowish point encircled by a ring. The scales lie so close to the bark, and sometimes so close together, that they are hardly distinguishable without a magnifying glass. The general appearance is of a grayish, slightly roughened, scurvy deposit. When crushed by scraping, a yellowish oily liquid will appear. This is one of the surest identifications of San Jose Scale.

The young insects appear in spring soon after the leaves open. They crawl about for a short time, until they find a suitable place to locate, when the females become stationary, insert their bills and begin to suck the sap or juice of the tree or fruit. The males develop a tiny pair of wings.

The scales remain on the trees during the winter. Their power of reproduction is enormous, and as San Jose Scale is very liable to be overlooked in its early stages, and is difficult to destroy after it becomes established, it should be watched very carefully, and upon first appearance treated strenuously. Not only your own interests but also those of the entire community are at stake.

The regular fall and spring Soluble Sulphur Compound spray, 20 to 25 pounds to 100 gallons of water, is especially designed to control San Jose Scale, and at the same time will destroy a multitude of other insects, eggs and fungi.

SCAB—APPLE

A most damaging fungus disease, prevalent in districts subject to frequent rains during spring and early summer. It winters over on dead leaves and on twigs of the trees. With the coming of warm days in spring, when buds begin to open, the spores shoot out and attach themselves to foliage, and later to

fruit. Unchecked it develops rapidly, forming spots and scabs, and, wherever these attach, the fruit becomes stunted and deformed.

Scab is very difficult to control because of the varying conditions of the seasons, and because, in order to destroy it, there is also danger of injury to foliage and fruit. Scab is one form of plant life growing upon another and higher form of plant life.

The great difficulty has been to determine what spray best to use, when best to spray, and what strength will at once be effective and safe.

Sulphur, for Scab as well as for most all fungi, has been found most effective and safest. Lime-Sulphur solutions have for several years been well established as valuable for scab control. Soluble Sulphur Compound, the perfected sulphur spray, is now conceded to be the best all-round fungicide.

The time of application is all-important. The omission of one application may result in failure. The spray must, for best results, be present before infestation of scab occurs.

The only safe and sure way is to begin spraying with the so-called dormant application, at or just before the time when the buds are opening. At that time use Soluble Sulphur Compound at the rate of 20 pounds to 100 gallons of water. This application at one and the same time accomplishes the purpose of all dormant spraying.

Second: When bloom buds are in pink, just before petals open, spray with Soluble Sulphur Compound at the rate of 6 pounds to 100 gallons of water.

Third: A week or ten days after petals fall, spray again with Soluble Sulphur Compound, 2 pounds to 100 gallons of water.

If desired, an application can be made in combination with Electro Arsenate of Lead Powder when the last petals are falling, in order to control Codling Moth with the same application. We prefer, however, not to so combine the sprays. The poison for Codling Moth at this time should be driven in with a driving pressure, while the application for Scab is better applied in a fine mist, to cover foliage without drenching.

Subsequent applications should be made from two to four weeks apart, to keep expanding fruit and foliage covered. Use 2 pounds Soluble Sulphur Compound to 100 gallons of water for these later applications.

Success in this is won only by care, thoroughness, and by taking no chances by omitting the early applications. When using Soluble Sulphur Compound follow our directions closely, and our directions only. Stir the powder until completely dissolved.

SCAB—POTATO

A scab-like fungus on the skins of potatoes. It is carried over on seed, in the soil and in manure. Do not plant in soil which has previously produced scabby potatoes, and do not apply fresh stable manure a short time before the seed is planted. If seed

SOLUBLE SULPHUR COMPOUND is manufactured on the Pacific Coast by THE CHAS. H. LILLY CO. ONLY, under Niagara Sprayer Co. patents. There is no other sulphur spray even similar. It has been so successful that inferior imitations are being manufactured. The genuine bears our well known trade mark,

shows the least sign of scab, soak it one hour in a solution of 1 pound (1 pint) of Formalin (Formaldehyde) to 45 gallons of water.

SLUG. A, Larvae; B. Adult; C. Larvae on leaf.

SLUGS

These small, slimy, dark green larvae skeletonize the leaves of pear, cherry, quince and plum trees. They originate from eggs deposited on the leaves early in June by a four-winged black fly. The larvae become full grown in four or five weeks, and are then nearly a half inch long. They then shed their slimy skins, appearing in a clean yellow suit, after which they leave the trees and burrow into the ground, where they change to pupae, and about two weeks later appear as four-winged flies. There are two broods each season; the second appearing in August.

When the insects appear, spray with Electro Arsenate of Lead Powder, 1 pound to 50 gallons of water; or dust with lime or road dust. Repeat as frequently as is necessary.

TENT CATERPILLAR

Tent Caterpillars are easily known by the compact web or tent which they form on the limbs of all orchard and some shade trees, especially alder and wild cherry. The eggs are deposited in July upon the twigs, and coated with a varnish which protects them. They remain in this state until spring, when the little caterpillars emerge and begin feeding on the foliage. In a few days they begin forming tents in the forks of the branches. They have regular times for their meals, and retire to their tents when not feeding and during cold and wet weather.

The caterpillars become full grown in about six weeks, and are then nearly two inches long, with a hairy body and having a distinct white stripe along the middle of the back, on each side of which there are numerous short yellow lines. The sides are partly covered with paler lines, spotted and streaked with blue, while the lower surface of the body is black.

Most of the caterpillars leave the trees where their nests are as soon as they become full grown, to find a suitable place to pupate in, usually under a board or in the cracks of a fence. Here they spin an oval, yellow cocoon within which they change to the pupae or chrysalis state. In two or three weeks reddish-brown moths emerge from these cocoons, and there in a short time deposit their eggs, as stated above, after which they soon die. There is but one brood each season.

TENT CATERPILLAR. A and B. Larvae; C. Eggs; D. Cocoon.

The Tent Caterpillar, although serious if neglected, is easily controlled. The regular Soluble Sulphur spray, 20 pounds to 100 gallons of water, in fall and spring, will destroy many of the eggs, and the regular Arsenate of Lead spray for Codling Moth, when the last petals are falling in spring, will destroy the caterpillars. Burn the tents, with a torch, in the morning before the caterpillars leave the tents.

SMUT—WHEAT AND OAT

"There are few agricultural problems in the State of Washington of greater importance than the smut problem. That the presence of this parasite in the wheat fields of Eastern Washington results in the loss of from five to ten million bushels of wheat annually is a very conservative estimate. A further loss results from a deterioration in quality of the wheat produced."

The above is from Washington Agricultural Experiment Station Popular Bulletin No. 73, in regard to "Stinking Smut in Wheat," which all wheat growers should procure. Bulletins No. 54 and No. 83 also treat on Wheat and Oat Smut.

In brief, the Bluestone treatment is as follows: Soak the seed ten minutes in a solution of 1 pound copper sulphate (bluestone), 1 pound salt and 5 gallons water.

In the formaldehyde treatment the seed is soaked not less than thirty minutes in a solution of not less than 1 pound of formaldehyde to 40 gallons of water.

If it is worth while to spray, it is worth while to do it right. Spraying carelessly, at any but the proper time, or with inferior materials, is a waste of time and money.

LILLY'S SOLUBLE SULPHUR COMPOUND

Manufactured on the Pacific Coast by The Chas. H. Lilly Co.
under Niagara Sprayer Co. patents

THE SULPHUR SPRAY PERFECTED As Effectual as Lime-Sulphur Solution More Convenient - Less Expensive

SOLUBLE SULPHUR COMPOUND is the old standard sulphur spray with the water left out, making it more convenient to handle and only one-sixth of the weight to pay freight charges on. It is a dry powder, easily dissolved in either cold or hot water.

It is used in the same way as lime-sulphur solution, is fully as effectual in every way and superior in many ways. There is no sediment; no grit to wear out pumps and clog nozzles; no freezing; no crystallization; no leakage; no loss. If the can is kept tightly closed it will keep indefinitely, and any that is left over at the end of the season can be used the next year.

A 100-lb. drum of Soluble Sulphur is equal to a 600-lb. barrel of lime-sulphur solution, saving five hundred pounds freight charges, hauling and handling.

Soluble Sulphur Compound is powdered by a fusion process, not by boiling, whereby sulphur is combined with soda ash, a true solvent. The result is a perfectly soluble compound high in sulphur as polysulphides. This compound is analogous in chemical form to the calcium polysulphides of a high grade lime-sulphur solution.

The sodium polysulphides are superior, for it should be remembered that common soda is used extensively in the manufacture of soaps because of its grease cutting property. As used in forming Soluble Sulphur Compound this grease cutting characteristic reinforces the primary insecticidal value of the sulphur, forming a superior insecticide and fungicide surpassing either material alone, or other combinations, such as lime-sulphur. Soluble Sulphur Compound is used for the same purposes, on the same trees and shrubs, and in the same manner as lime-sulphur solution. Where one gallon of thirty-three degree lime-sulphur solution would be used two pounds of Soluble Sulphur Compound is used instead. It is simply sifted into the tank of water while being stirred or agitated, dissolves readily, and after being stirred for a few moments will remain in solution an indefinite time.

For estimating the amount required, those who have used lime-sulphur solution should order a one-hundred-pound drum of Soluble Sulphur instead of each fifty-gallon barrel of lime-sulphur solution used in the past. The amount required for an acre of course varies with the size of trees and manner of using, but for average use, one hundred pounds of Soluble Sulphur will be sufficient for two acres of orchard.

Instructions for using Soluble Sulphur will be found in preceding pages; also in our Spray Bulletin, which is inclosed in packages or will be mailed free on request.

1-lb. can	\$0.20
10-lb. can	1.25
100-lb. drum	7.50

F. O. B. Seattle or Portland.

Soluble Sulphur Compound is for sale by dealers or may be ordered from us direct. Be sure that the brand "**LILLY'S**" appears on the package.

ELECTRO ARSENATE OF LEAD POWDER

Different from any Other Arsenate of Lead

ELECTRO ARSENATE OF LEAD POWDER is different from any other arsenate of lead. It is not a paste that has been dried and ground, it is a precipitate, and is so fine that it will mix with water readily, will not lump, and when used as a dust spray will stick to the dry leaves as well as ordinary Arsenates of Lead when applied wet.

It is the strongest and most effective, as well as the safest and easiest to use.

By a special process which no other manufacturer can employ, there is combined properly with lead $32\frac{1}{2}$ to $33\frac{1}{2}$ per cent arsenic oxide with less than one-half of one per cent free or water soluble arsenic. Arsenic oxide is the active agent, and free arsenic oxide will injure the foliage if in excess. This gives a killing strength much greater than that of other brands, and consequently, much less Electro Arsenate of Lead Powder is needed to do the work.

This is the original form of dry arsenate of lead suitable for both wet spraying and dusting, and the only form that is not granular or crystalline. There is no other as good.

There are several distinct advantages in Electro Arsenate of Lead in powder form:

You do not pay freight charges on 40 to 60 per cent of water, which all paste forms contain.

It is an impalpable powder, hence there is a greater and more even distribution over the foliage. As it does not lump, there is no clogging of nozzles. Every particle is of value.

It is indestructible; age does not impair its value. Every one familiar with spraying knows the annoy-

ance of using old pastes and that the lumps that remain in the tank and are useless. This annoyance does not exist with Electro Arsenate of Lead Powder. It is always in fine mechanical condition, does not

lump, is free from granulation or grit, and there is no waste.

Electro Arsenate of Lead Powder may be used either as a dust spray or mixed with water as a wet spray.

Electro Arsenate of Lead Powder when dusted on a dry leaf will stick as well as ordinary arsenate of lead used with water.

The fineness of the powder and the increased strength makes action quicker, as the insect has to eat less to kill it.

In sticking quality it is unequalled. Even after the leaves have fallen in the fall, if examined with a microscope, they will be found to be covered with a perfect film of the poison. One or two sprays insure insect control continuously throughout the season.

Electro Arsenate of Lead Powder may be combined with the sulphur spray by mixing

with Niagara Soluble Sulphur Compound.	
$\frac{1}{2}$ -lb. Carton	\$.25
1-lb. Carton	.40
10-lb. Drum	3.00
25-lb. Drum	6.75
50-lb. Drum	13.00
100-lb. Drum	24.00

F. O. B. Seattle or Portland

LILLY'S LIME AND SULPHUR SOLUTION

Best of the Old Style Sulphur Sprays

FOR THOSE who still prefer the old style sulphur spray we can still furnish Lilly's Lime and Sulphur Solution. This has been used by the orchardists of the Northwest for many years, and has long been the standard sulphur spray. We recommend Lilly's Soluble Sulphur Compound as being just as effective, more convenient and less expensive, but some who have used our Lime and Sulphur Solution with entire satisfaction will no doubt be averse to changing.

Prices: Gallon, 50c; five-gallon can, \$1.75; barrel (about 50 gallons), \$9.00.

It is a clear, cherry-red solution, free from sediment, and tests 33 degrees Baume, which is as concentrated as it is possible to make a lime and sulphur solution which will remain in solution.

For winter or early spring spraying, before buds are open, it is used at the rate of one gallon of solution to eleven gallons of water. For summer spraying it is diluted with about twenty-eight parts water.

ELECTRO BORDO-PULP

This is a scientific compound of copper sulphate (blue vitriol) and high grade lime for use as a fungicide only. It is a Bordeaux Mixture in a concentrated form.

Although Soluble Sulphur Compound is superior for most purposes, for controlling fungi on some kinds of vegetation such as potatoes, melons, cucumbers, beans, grapes, etc., Electro Bordo-Pulp is preferable.

One of the serious drawbacks which has brought Bordeaux Mixture into disfavor, especially among fruit growers, is that it is liable to cause russetting of the fruit. In Electro Bordo-Pulp all excess of caustic lime is removed and this russetting is reduced to a minimum.

Cannot be shipped by parcel post.

PRICES

1-lb. jar\$0.30
10-lb. kit 2.00

Electro Kerosene Emulsion

For spraying plant lice, scale, leaf hoppers, etc. It is readily soluble in water, and is ready for use by simply adding the proper amount of water. Directions for use accompany each package.

Price: 1-gallon can\$1.00

Electro Creosote of Pine Tar

It is essential in tree surgery work where there is disease present, such as canker, that the wound be protected against further infection. This protection, which is a very simple one, will often mean the saving of a tree.

Creosote has been found to be the best antiseptic; and pine tar creosote only should be used, as it has considerable advantages over the coal tar creosote.

Price: 1-gallon can\$1.00

ELECTRO BORDO-LEAD

A combination of Electro Bordo-Pulp and Arsenate of Lead in proper proportions, and is especially adapted for a combined spray on grapes, ground crops, etc. Ten pounds of this mixture in fifty gallons of water is equivalent to five pounds of 20% Arsenate of Lead and in Bordeaux to the 4-4-50 formula.

The statements in regard to Electro Bordo-Pulp are also true of the Bordeaux part of this mixture. It is a very desirable combined insecticide and fungicide ready for use; requiring only the addition of water.

As it is a poison, it cannot be shipped by parcel post.

PRICES

1-lb. jar\$0.35
10-lb. kit 2.50

Electro Insecticide Soap

This is a whale-oil soap especially prepared, and does not contain free alkali. This is a very important item, as the presence of free alkali means severe injury to foliage and fruit. It is valuable as a spray for plant lice and soft-bodied larvae.

It is to be dissolved in hot water and diluted at the rate of 1 lb. of soap to 5 to 7 gallons of water for plant lice. For scale insects dilute with 4 gallons of water.

PRICES

1-lb. package\$0.20
10-lb. kit 1.80
100-lb. keg 13.00

SOLUBLE SULPHUR COMPOUND is manufactured on the Pacific Coast BY THE CHAS. H. LILLY CO. ONLY, under Niagara Sprayer Co. patents. There are on the market inferior imitations, packed in similar packages with misleading labels. Be sure to get the genuine, bearing our well known trade mark.

Electro Arsenate of Lead Powder is in every way superior to the old paste form.

LILLY LAWN LIME

A chemical compound which, when applied as a lawn dressing, burns up broad-leaved weeds such as dandelion, daisy, plantain, dock, sorrel, chickweed, etc. One application will usually destroy coarse growing weeds. It is not only harmless to the narrow leaved grasses, but acts as a splendid fertilizer.

Prices: 2 lbs., 25c; 5 lbs., 50c; 25 lbs., \$2.00; 50 lbs., \$3.50; 100 lbs., \$6.00.

NIKOTEEN

A refined nicotine liquid insecticide for fumigating and spraying. It is a very powerful solution, 30% chemically pure nicotine, and will kill all insects affected by tobacco. Among the insects most susceptible to nicotine poisoning are Aphis or Plant Louse, Thrip, Apple Aphis, Black Peach Aphis, Currant Leaf Hopper, Grape Vine Leaf Hopper, Rose Leaf Hopper and Melon Louse.

It is colorless and stainless, and when properly applied cannot harm plants, shrubs, fruit trees, etc. In greenhouses and conservatories it is vaporized by painting on steam pipes or by blowing live steam through a solution containing Nikoteen. By this method fumigation with Nikoteen costs 4c for each 600 square feet of floor space. For most outdoor work, and sometimes under glass, it is applied by spraying. Write for circulars.

8-lb. bottle, \$10.00; 4-lb. bottle, \$5.50; 1-lb. bottle, \$1.50; ½ lb., 85c; ¼ oz., 40c.

Cannot be shipped by parcel post.

APHIS PUNK

Nikoteen Tobacco Paper

A nicotine fumigant for use in greenhouses and applied places where the fumes can be confined. It is composed principally of nicotine, wood pulp and chemicals that assist and control the burning of the pulp and the vaporizing of the nicotine. Always uniform and effective. Write for circulars.

Can of 12 sheets. Weight 1 lb. \$0.60
Case of 12 cans. Weight 8 lbs. 6.50

May be shipped by parcel post.

Fumigating Tobacco Powder

A finely ground tobacco powder for burning in greenhouses and other places where the fumes can be confined.

Price: 100 lbs., \$5.00; less than sack lots, 7½c per lb.

Dusting Tobacco Powder

For applying as a dust spray for Aphis and other soft bodied insects where fumes cannot be confined.

Price: 100 lbs., \$5.00; less than sack lots, 7½c per lb.

Quassia Chips

For destruction of plant lice on cabbage, cauliflower, fruit trees, etc. Boil one pound of quassia chips in water; after boiling dilute with enough water to make eight gallons of solution.

Price: 1 lb., 10c; 10 lbs., 7c per lb.

LILLY TOBACCO EXTRACT

A tobacco and soap compound for the destruction of Aphis and other Plant Lice. Especially useful on rose bushes and house plants. One bottle makes three gallons of spray. Cannot be shipped by parcel post.

Price: 7-oz. bottle. 25c

LILLY TREE SOAP

A soap compound for destroying Green Aphis, Woolly Aphis, Hop Aphis, Oyster Shell Scale, Codling Moth, Canker Worm, Caterpillars, and for preventing fungus diseases. Especially adapted for rose bushes. May be shipped by parcel post.

Price: 1-lb. cake 15c

40 Per Cent Tobacco Extract

Black Leaf 40 - Nicotine 40

A concentrated solution of nicotine sulphate guaranteed to contain forty per cent nicotine, highly recommended for the destruction of Aphis and other soft bodied sucking insects. Also an excellent dip for animal parasites, such as scab and lice on sheep and cattle, sheep ticks, etc.

This is the best and most convenient form of tobacco spray. It is uniform in strength, and by adding the correct amount of water there is no danger of making it so strong as to be harmful or so weak as to be useless.

Directions for using accompany each can. Being a poison, it cannot be shipped by parcel post.

¼-lb. can.	Makes 20 to 50 gals. spray.	.. \$.50
½-lb. can.	Makes 40 to 100 gals. spray.	.. .75
2-lb. can.	Makes 160 to 400 gals. spray.	.. 2.50
10-lb. can.	Makes 800 to 2000 gals. spray.	.. 10.75

Sulpho-Tobacco Soap

Destroys insects on plants, shrubbery, vines, small fruits and trees; also on animals, and is valuable as an exterminator of moths, carpet bugs, etc. One cake makes 1½ gallons of solution. May be shipped by parcel post. Postage additional.

Price: 3-oz. cake 10c

Fish Oil Soap

Used as a wash during the summer. Destroys aphids and other insects and prevents the spread of scales and fungus.

Price: 50-lb. box, \$3.25; less than box lots, 10c per lb.

Sulphur

The best grade fine ground sulphur for spraying and fumigating. Write for prices on large quantities.

Price: 100 lbs., \$2.50; 50 lbs., \$1.50; less quantities, 5c per lb.

Bluestone

Copper sulphate, for spraying. Prices fluctuate; if wanted in large quantities, write for quotation.

Price: 1 lb., 15c; 10 lbs., 10c per lb.

IDEAL SPRAYING OUTFIT

Handiest and Most Efficient For
General Spraying
and Whitewashing

LILLY'S
SOLUBLE
SULPHUR
Compound
is the best
Sulphur
Spray

THIS is the best and most convenient outfit for general spraying and whitewashing. It is light, compact, easy to operate and convenient to handle. The tank holds fifteen gallons, and is mounted in such a way that the liquid will not slop or spill. It has the largest air chamber of any spray pump of similar size, enabling the operator to keep a uniform pressure at the nozzle. A pressure of 150 lbs. is easily maintained.

The pump barrel is $1\frac{3}{4}$ inches in diameter and 7 inches long. The plunger is made of brass and is self-oiling. The packing is cotton wick,

which resists action of chemicals, and may be tightened without removing from the pump. The valves are bronze balls $\frac{3}{8}$ of an inch in diameter, which allows free passage of the liquids and prevents clogging. Both valves are removable. A mechanical agitator keeps the liquids well stirred. A fine strainer prevents anything getting into the working parts of the pump.

The outfit includes the following equipment: 10 ft. $\frac{3}{8}$ in. Pressure Hose, 8 ft. Pipe Extension in two pieces, 1 Ideal Nozzle, 1 Brass Shut-off Cock. Shipping weight 60 lbs. Price, \$20.00

PERFECTION SPRAYER

The Most Reliable Compressed Air Sprayer

A compressed air sprayer without the faults so common in many knapsack sprayers. In addition to handling the usual spray solutions, it will handle whitewash, water paints, Bordeaux mixture, etc. It is made of extra heavy galvanized steel, lock sealed at corners to heavy convex heads; stronger than others in construction; powerful in action.

The tank is $7\frac{1}{2}$ x 20 inches, and holds three gallons of liquid. Weight, empty, 9 lbs. Price, \$5.00

The Myers Whitewash Sprayer

This Whitewash and Cold Water Painting Machine and General Purpose Sprayer is a most complete and serviceable outfit. The tank is made of heavy galvanized iron, has a wide bottom, and holds seven gallons.

The pump is made of brass, fitted with brass ball valves and patent agitator. The cylinder is $1\frac{1}{4}$ inches in diameter, and the air chamber is extra large. Fitted with Bordeaux nozzle. Weight 25 lbs.

No. 329 Price, \$8.00

Auto-Spray Whitewash Sprayer

Especially designed for whitewashing, but equally valuable for any other kind of spraying, and is one of the best general purpose small sprayers on the market.

The heavy galvanized steel tank holds eight gallons of solution. The pump is made of brass, and is very powerful. Equipped with 8 ft. Spray Hose, 8 ft. Extension, Stop Cock, Perpetual Nozzle. Weight 40 lbs. Price, \$10.85

Even if you have only a city home, with flowers and shrubs, you need a suitable sprayer.

LILLY'S

SOLUBLE
SULPHUR
CompoundSulphur Spray
without waterConvenient
Economical
Effective

KING BARREL PUMPS

Always Dependable
Great Capacity - Powerful - Durable
Easy to Operate

THESE powerful spray pumps have great capacity and are designed for spraying orchards and large trees. They have extremely large air chambers, insuring uniform pressure; large cylinders, giving large capacity; and removable bronze ball valves which will not clog. The plunger is of special design, self oiling, and so constructed that the packing may be tightened without taking the plunger from the cylinder. The packing is of a special material. No leather or rubber is used. They are easy to operate, and great pressure can be developed with little exertion.

No. 4 King Pump. Pump with agitator and casting to fasten to chimes of barrel only. 1 3/4-inch cylinder; 2-inch air chamber\$7.50

No. 6 King Pump. Pump with agitator and casting to fasten to head of barrel only. 2 1/2-inch cylinder; 3-inch air chamber\$12.50

Yankee Barrel Pump

An excellent double acting pump for use with a barrel spraying outfit for all spraying purposes and for whitewashing. It is to be attached to barrel by bolting through casting to upper end of staves.

It has a large air chamber and works with compressed air, throwing a continuous spray or stream with great force. The suction barrel is made of heavy brass, and all valves and valve seats are made of brass ground together, so that all parts are absolutely tight. It has brass ball valves. These parts will not corrode or rust, nor is any part of the pump affected by spray solutions.

The plunger packing is a specially prepared and treated canvas, and is proof against sprays which would destroy leather packing. The duplex agitator keeps the liquid thoroughly stirred.

No. 25 Yankee Barrel Pump with Agitator, 5 ft. half-inch three ply Rubber Hose, and Vermorel Nozzle.....\$7.00

Auto-Spray Orchard Sprayer

An Exceptional Bargain

We have only a few of these pumps left, and to close out the line we are offering them at ridiculously low prices. The regular prices are \$35.00 and \$45.00. They are slightly shop worn, but have never been used, and are in good condition. The Auto-Spray No. 7 is a double cylinder, plunger style pump. It is very powerful and develops 100 to 120 pounds constant pressure. The air chamber is extra large.

The cylinders and valves are made of brass and are not damaged by spray solutions. The cylinders are horizontal and the handle vertical with long fulcrum. The valves are exposed, and the packing is so arranged that it can be replaced or adjusted easily. The pump is for big work, will supply two leads of hose, and in capacity is next to the large power sprayers.

If you have use for this kind of a pump, you will find it great value for the money.

No. 7 Auto Spray. Pump with Suction Hose and Strainer....\$15.00

No. 7-B Auto-Spray. Pump with Suction Hose, Strainer, two 25-ft. leads Spray Hose, Pressure Gauge, and two Perpetual Nozzles.....\$25.00

MODOC SPRAY PUMP

The Best and Strongest of all Bucket Pumps

NO farm garden or home is so large or so small that this handy little pump will not be found useful for spraying a few trees, shrubs or plants, white-washing hen houses or stables, spraying disinfectants, washing wagons or windows, or a thousand other uses. It is the best, strongest and most powerful bucket pump on the market. It is made entirely of brass except the handle and stirrup, which are malleable iron. The cylinder is extra large and is made of seamless brass tubing. The plunger is hollow, thus forming an air chamber which insures steady pressure. The valves are bronze balls. It is equipped with three feet of half-inch spray hose and interchangeable nozzle which when reversed will spray whitewash or Bordeaux mixtures. Weight $5\frac{1}{2}$ lbs.

Price, \$3.00

Little Giant Bucket Pump

A splendid bucket pump for any kind of spraying except white-washing. It is made of brass, not affected by spraying materials. It makes a continuous spray, or throws a solid stream fifty feet. Furnished with two brass nozzles. Weight 6 lbs. Price, \$2.50

Junior Spray Pump

This bucket pump requires no fastening of any kind; it holds itself down, and works anywhere and everywhere. It does away entirely with foot-rest, clamps, and leather packing. The all-brass suction working within a brass cylinder, with all-brass valves, does away with packing. It is especially useful around poultry houses, and

will spray whitewash as well as insecticides and fungicides. Excellent for spraying Lice Liquid and Fly Liquid. Weight, 3 lbs. No. 5.... Price, \$2.25

Floradora Insect Powder Gun

Especially adapted for dusting plants, shrubbery, animals or fowls with any kind of powder. It is extra large, holding one-half pound of powder. No. 1071..... Price, 35c, postpaid

Whirlwind Insect Powder Gun

For the same purposes as the Floradora, but not so large. Holds one-quarter pound of powder. No. 1040..... Price, 25c, postpaid

Lowell Powder Sprayer

For applying any kind of insecticide, fungicide, or disinfectant in powder form. The ball valve in end of cylinder is positive in its action, and it is impossible to draw any powder into the cylinder. The powder can holds one quart. Well made of heavy tin. Price, 75c, postpaid

LILLY'S LICE LIQUID
Exterminates Mites

LILLY'S HOLLY SPRAYER

This sprayer is made especially to our order, and in material, construction, model and efficiency is superior to other similar sprayers. It is made of heavy tin, is extra strong, the reservoir holds a full quart of liquid, and the plunger is of better construction and material.

It is the handiest sprayer for all small work such as spraying plants, shrubbery, vegetables, etc., and for applying Fly Liquid and Lice Liquid.

Price, 40c, postpaid

Brandt Continuous Sprayer

Has an air chamber which makes the pressure continuous; throws a fine, steady spray. It is made of heavy tin, well constructed and durable. It has two nozzles, one for throwing spray at an angle. Nozzles and tubes are made of brass.

This sprayer is for the same uses as the Holly Sprayer; will spray Fly Liquid, Lice Liquid, and any of the insecticides and fungicides in common use. Capacity of tank, one quart. Price, 75c, postpaid

Lilly's Soluble Sulphur Compound is the latest development of the sulphur spray.

Jasmin Spray Controller

An ingenious contrivance for controlling the flow of liquid through any extension pipe. The operator does not have to take his eyes off his work. A quarter turn of the handle shuts off the flow.

No. 105. Price
\$1.50, postpaid

**JASMIN
SPRAY CONTROLLER**
PAT. APPLIED FOR

Plain Nozzle

The simplest and most compact. Produces a fine spray.

No. 30650c, postpaid

Stop Cock

Fits one-half-inch hose and any standard nozzle or extension rod.

No. 964.....50c, postpaid

Hose and Nozzle Coupling

For connecting three-quarter-inch hose and any standard nozzle or extension.

No. 966.....40c, postpaid

For connecting one-half-inch hose and nozzle or extension.
No. 749 30c, postpaid

Extension Rods

No. 29. Bamboo Extension. Eight to ten feet long; lined with brass; with stop-cock.....\$3.00

No. 306. 2-ft. Brass Extension. Any number may be screwed together, making any length desired...40c. Postpaid.

No. 104. 3-ft. Brass Extension.....60c. Postpaid.

No. 34. Lowell 2-ft. Extension. For Lowell Compressed Air Sprayer only.....80c. Postpaid.

No. 33 Lowell Curved Extension. For Lowell Compressed Air Sprayer only.....\$1.00. Postpaid.

Vermorel Nozzle

No. 26. 1 Point...\$1.00. Postpaid.

No. 27. 2 Point...\$1.25. Postpaid.

No. 28. 4 Point...\$2.00. Postpaid.

The Winkle Mist Spray Nozzle

Light, strong and has no projecting parts to catch on limbs. Made in two styles, straight like cut, and with curved neck.

No. 107. Straight 75c. Postpaid

No. 108. Angle Neck 75c. Postpaid

Bordeaux Nozzle

The best for spraying Bordeaux Mixture or Whitewash. Makes a flat spray or a solid round stream.

No. 965.....50c. Postpaid.

Spray Hose

1/2 inch, 5-ply.....15c per foot

1/2 inch, 7-ply.....18c per foot

3/4 inch, 5-ply.....18c per foot

3/4 inch, 7-ply.....20c per foot

Above is for fifty-foot lengths. In less than fifty-foot lengths, 25c per pair additional for couplings.

DUNHAM WATER WEIGHT ROLLERS

Roller Bearings - Light Running - Adjustable Weight

IT IS IMPOSSIBLE to maintain a lawn in perfect condition without rolling. A roller must be used to make the lawn level and smooth, but its most important use is to press down the grass which has been heaved up during the winter and to compress the soil about the roots. Grass roots cannot thrive in open spaces in the soil.

The Dunham Water Ballast Roller is by far the best in every particular. By filling with water it can be made any weight; heavy enough for firm turf or tennis court or light enough for the softest lawn.

It is the easiest running roller on the market. The axle revolves in hardened steel roller bearings. The bearing castings are machined as smooth as in an automobile.

The material and workmanship are of the very best, and they will last a lifetime. Write for descriptive circulars.

No.	Diameter	Length	Sections	Empty	Filled	Price
WB 3.....	14 inches	20 inches	1	65 lbs.	200 lbs.	\$11.00
WB 5.....	18 inches	24 inches	1	80 lbs.	310 lbs.	13.00
WB 7.....	24 inches	24 inches	1	115 lbs.	500 lbs.	17.00
WB 11.....	18 inches	24 inches	2	100 lbs.	330 lbs.	18.00

BOSTON JUNIOR PARK SPRINKLER

For Watering Large Areas

This sprinkler is designed for watering large areas, such as parks, golf courses, putting greens, cemeteries, truck gardens, etc. It operates very effectively and economically, producing a continuous artificial shower.

When the sprinkler is in operation the two spray arms slowly revolve, spreading the water uniformly in a fine, dense, rain-like spray over an area about seventy-five feet in diameter, delivering approximately seventy gallons of water per minute.

It is fitted with 2 1/2-inch hose connection, and for satisfactory operation requires at least twenty-five pounds pressure at the sprinkler.

The wheels have six-inch tires with rounded edges, and will not mar the most delicate turf. The nozzles and working parts are bronze. There are no gear or delicate bearings to get out of order. Each machine is thoroughly tested before shipment.

If you have extensive areas to water, write for descriptive matter, or call at our office and see one in operation. Net weight 140 lbs.; shipping weight 200 lbs.

Price, \$80.00.

THE YOUNG FOUNTAIN

For Watering Lawns - Throws a Fine Spray

The Young Fountain, or Adjustable Lawn Nozzle, has several uses and is unique in its method of spraying water. It can be adjusted to throw the water in a finely atomized spray or mist, which is much superior to the heavy drops produced by other sprinklers, the same as a fine misty rain is more beneficial than a heavy downpour.

It will spray an area twenty-five to thirty feet in diameter when supplied by a three-quarter inch hose with a pressure of thirty pounds at the nozzle, distributing about three and one-half gallons of water per minute.

The nozzle is made of polished bronze. There are no moving parts, consequently it should last a lifetime. Write for descriptive circular.

Price, \$5.00.

CAHOON BROADCAST SEEDER

The most accurate and durable hand broadcast seed sower. Sows grass and grain seed evenly and rapidly. Made of steel, iron and brass. and will last a lifetime. Every machine is fully warranted. Weight 6 lbs. Price, \$3.50

I X L Grass Seeder

Although the price is low, this seeder is entirely practical and sows seed accurately and evenly. It can be regulated to sow any amount from one pint to ten quarts per acre. Write for circular. Weight 1 lb. Price, \$1.00

Little Giant

Broadcast Seeder

The best little broadcast seeder for the price. It is light, strong, accurate and does the work much easier and better than can be done by hand. Weight 3½ lbs.

Price\$1.90

The Clipper Grain and Seed Cleaner

THE CLIPPER is the standard seed cleaner and is the machine most universally used by seedsmen.

Lilly's Seeds are cleaned with larger size Clipper Cleaners. They are recommended by State Agricultural Colleges and the U. S. Department of Agriculture.

The Clipper cleans all kinds of seeds and grains thoroughly at one operation, without waste, and leaves no tailings to be rehandled. It does the best work with the least power and with the least amount of repairs. They are guaranteed to do more perfect work than any other hand-power seed cleaner manufactured.

We will mail you the Clipper Seed Cleaner Catalog if you wish it.

No. 1 Hand Power Clipper Grain and Seed Cleaner.

This is the best all around farm mill. It is unequalled for cleaning all classes of grains, seeds or legumes, such as wheat, corn, oats, barley, rye, beans, buckwheat, kaffir corn, cane seed, millet, rice, coffee, spices, clover, alfalfa, timothy, mustard, flax, etc. While other cleaners depend almost entirely upon screens to do the work, the superiority of the Clipper is in the "Vertical Blast."

Capacity, 40 bushels market wheat or 12 bushels clover seed per hour. Complete with ten screens, 19x29 inches, with spreading boards and all necessary attachments. Extra screens \$1.00 each. Shipping weight, 200 lbs.

Price, F. O. B. Seattle or Portland, \$25.00

No. 2 Hand Power Clipper Seed Cleaner.

This is a hand-power cleaner of large capacity, and is designed especially for cleaning all kinds of fine seeds, such as clover, timothy, alfalfa, millet, flax, red top, blue grass, etc. It will do any work that the No. 1 will do, but is not recommended as a general grain cleaner for the reason that it requires too much power to turn it by hand on grain where a strong air blast is necessary.

Capacity, 20 bushels clover seed per hour. Complete with ten screens, 24x33 inches. Extra screens \$1.00 each. Shipping weight 250 lbs.

Price, F. O. B. Seattle or Portland, \$35.00

We can furnish the large size Clipper Cleaners for use with power. Write for prices.

IRON AGE FARM AND GARDEN IMPLEMENTS

More and Better Work with Less Labor

COMBINED HILL AND DRILL SEEDER

DOUBLE AND SINGLE
WHEEL HOE

No. 6.

sown in either hills or drills, covered and rolled; the plants may be hoed, cultivated, raked or ridged, either astride or between the rows. If unable to purchase a complete equipment at the outset, one of the lesser combinations may be purchased and additional attachments added at any time.

No. 6. DOUBLE AND SINGLS WHEEL HOE, HILL AND DRILL SEEDER. Complete, as shown in above cut.....Price, \$14.50

No. 7. HILL AND DRILL SEEDER. The same as No. 6 without Cultivating attachments. Those attachments may be added at any time, per list on next page.....Price, \$11.00

No. 14. HILL AND DRILL SEEDER WITH HOES AND TEETH. The same as No. 6 without plows or rakes \$12.80

No. 4. DOUBLE AND SINGLE WHEEL HOE AND DRILL SEEDER. The Seeder sows in drills only. Equipped with Hoes, Plows, Cultivator Teeth, and Rakes, the same as No. 6. \$13.35

No. 5. DRILL SEEDER. Drill Seeder only. The same as No. 4 without cultivator attachment\$9.95

No. 40. DRILL SEEDER AND DOUBLE AND SINGLE WHEEL HOE. The same as No. 5 with Side Hoes.....\$11.70

No. 1. DOUBLE AND SINGLE WHEEL HOE. With Hoes, Cultivator Teeth, Plows and Rakes. The same as No. 6 and No. 4 without seeder\$8.65

No. 3. DOUBLE AND SINGLE WHEEL HOE. The same as No. 1 with Hoes only.....\$5.45

No. 13. DOUBLE AND SINGLE WHEEL HOE. With Hoes and Cultivator Teeth. Same as No. 1 without plows or rakes.... \$6.85

COMBINED
HILL AND DRILL SEEDER
SINGLE WHEEL HOE

No. 15. SINGLE WHEEL HOE, HILL AND DRILL SEEDER. Sows seed either in drills or in hills. Equipped with Hoes, Rakes, Cultivator Teeth and Land side Plow, as shown in above cut.....\$13.25

We will mail you the IRON AGE Catalog if you wish it.

- No. 16. HILL AND DRILL SEEDER. The same as No. 15 without cultivator....\$10.25
 No. 17. SINGLE WHEEL HOE AND DRILL SEEDER. Sows in drills only. Cultivator equipment the same as No. 15.....\$12.00
 No. 18. DRILL SEEDER. Drill Seeder only. The same as No. 17 without cultivator attachments. Weight, 39 lbs.....\$9.15
 No. 20. SINGLE WHEEL HOE. Same as No. 17 without seeder. Weight 28 lbs.....\$7.30
 No. 21. SINGLE WHEEL HOE. Same as No. 20 with Side Hoes only. Weight, 23 lbs.....\$4.85

No. 22. COMBINED FERTILIZER DISTRIBUTOR HILL & DRILL SEEDER

This implement sows seed accurately, either in hills or drills, and at the same time distributes fertilizer either in line with the seed or at side of the drill. Neither the drill or fertilizer distributor are interchangeable with the other implements, and no cultivating attachments can be used with this implement. Weight 65 lbs. No. 22. Price, \$20.50

No. 23. FERTILIZER DISTRIBUTOR.

Hill and Drill Seeder Attachment. Fig. 398 may be attached to this, making it a No. 22. Weight, 40 lbs.....\$15.00

No. 22

No. 1. COMBINED HARROW & CULTIVATOR

A very popular implement. The width is adjustable from 11 inches to 38 inches. Angle and depth are also adjustable. The teeth are steel, diamond shaped, and have small cultivator points forged on one end. Shipping weight 66 lbs. Price, \$5.20

WE WILL MAIL
THE
IRON AGE
CATALOG
ON REQUEST

No. 6. HORSE HOE AND CULTIVATOR

This implement is adjustable to many forms and uses, and is almost indispensable to the market gardener and farmer. It is simple, strong, compact, light, and the material is of the best.

The width and depth may be regulated instantly, while in motion. Weight 83 lbs.

Price, \$8.75

Attachments for IRON AGE Implements

Fig. 133. DRILL SEEDER. May be used with either the Single Wheel or Double Wheel Hoe frame.....\$5.00	Fig. 33. ONION SET GATHERER.... .95
Fig. 134. HILL AND DRILL SEEDER. May be used with either the Single Wheel or Double Wheel Hoe frame.....\$6.00	Fig. 236. HILLING ATTACHMENT... 1.40
Fig. 184. FERTILIZER DISTRIBUTOR. May be used on the Single Wheel Hoe frame. Cannot be attached with the seeder..\$5.40	Fig. 84. WEEDER ATTACHMENT... .95
Fig. 170. DOUBLE MOULDBOARD PLOW.....\$1.60	Fig. 81. DOUBLE WEEDER ATTACHMENT..... 1.25
Fig. 112. CENTER TOOTH ATTACHMENT..... .65	Fig. 169. DISC AND FENDER ATTACHMENT..... 1.25
Fig. 216. SPECIAL FENDER SIDE HOES..... 1.60	Fig. 82. LANDSIDE PLOW.....\$1.05
	Fig. 369. DISC CULTIVATOR..... 2.35
	C-26. LEFT HAND PLOW..... .50
	C-30. RIGHT HAND PLOW..... .50
	C-29. RAKE..... .50
	30-A. CULTIVATOR TOOTH..... .20
	C-19. RIGHT HAND SIDE HOE..... .50
	C-20. LEFT HAND SIDE HOE..... .50

MASTER'S PLANT SETTER

ONE MAN with one of these plant setters will set, fertilize, and water more plants than three men can set by hand, and will do it easily, without stooping. Every plant is well set and securely rooted by absorption, nature's way, so that it has a chance to grow. The machine is durably constructed, and is entirely practical. Shipping weight 5 lbs. Price \$4.00.

Eureka Tubular Potato Planter

Eliminates back-ache. Plants any size seed, and any number of pieces, at an adjustable, uniform depth. The operator stands upright, drops seed into top of tube, steps on hopper to force planter into the ground, tips planter forward to trip it, and steps forward to next hill. Weight 4 lbs. Price \$1.25.

Acme Hand Potato Planter

This planter works on the same principle as the Eureka, but has no tube, and the planter must be raised and the seed dropped into the hopper. Weight 3 lbs. Price \$1.00.

Acme Rotary Automatic Corn Planter

The best planter made for corn, beans, peas, or similar seeds. It is operated with one hand; is very light, 5½ lbs., and plants any number of seeds with extreme accuracy. Price \$1.50.

Acme Corn Planter

A two-handled planter; light, durable, well made, and accurate. It plants corn, beans, peas and similar seeds, and does not crack the seed. Shipping weight 5 lbs. Price \$1.00.

Hot-Bed Thermometer

To be inserted in the earth in hot-bed or mushroom bed. Encased in wood, with brass point. Weight 3 oz.

No. 1068.

Price 90c.

Self-Registering Thermometer

Registers both the coldest and warmest temperature during any given time. May be used as a check on the night-watchman, or to keep tab on the weather during the night. Weight 7 oz.

No. 1067.

Price \$2.00.

LILLY'S
FERTILIZERS
ARE
PROFITABLE
INVESTMENTS

Neponset Flower Pots

Made of heavy waxed paper. Splendid for shipping plants. Unbreakable, light, and economical. Write for samples.

Size.	Weight per 1000	Price 1000	100
2¼ inch	15 lbs.	\$3.00	\$0.40
2½ inch	18 lbs.	3.50	.50
3 inch	28 lbs.	5.50	.75
4 inch	58 lbs.	10.00	1.25

If goods are to be shipped by parcel post, remit sufficient to pay postage.

KILLS
GOPHERS
SQUIRRELS

Erickson's

KIL-EM

Exterminator

PRAIRIE-DOGS
COYOTES

**SURE DEATH TO
GOPHERS, SQUIRRELS, PRAIRIE DOGS,
RABBITS, RATS AND MICE.**

A poison that gophers will eat. Kills ten gophers where traps get one. Put up in cans of four sizes. The large can will kill 800 to 1000 gophers. Cannot be mailed.

Prices, 25c; 50c; \$1.00, and \$2.50.

Official Rat Trap

Rats nibble upward; hence, other traps often fail to catch. This is released by either upward or downward pressure, and is sure to catch.

Price, 25c each; \$2.00 per dozen; postpaid.

Official Mouse Trap

The same as the Official Rat Trap, except that it is smaller.

Price, 10c each; \$1.00 per dozen; postpaid.

Reddick Mole Trap

The simplest, safest, strongest, and surest. It is set by simply pulling up the plunger rod. Made of heavy cold rolled steel, galvanized. Weight 2½ lbs.

Price, 75c

Out o' Sight Mole Trap

Neat and effective. No mole can pass under it and live. Weight 1½ lbs.

Price, 75c.

Raffia

Natural color, for nursery work or for making baskets. Price, 25c per lb.; 10 lbs. or more, 18c per lb.; bale (about 225 lbs.), 15c per lb.

Tree Labels

	Weight per 100	Price	
Wood, painted.	100	1000	
3½ inch. Notched	6 oz.	\$.15	\$.80
3½ inch. Copper wired	7 oz.	.25	1.30

Pot Labels

	Weight per 100	Price	
Wood, painted.	100	1000	
4 inch	5 oz.	\$.10	\$.85
5 inch	6 oz.	.15	1.00
6 inch	8 oz.	.20	1.25
10 inch	16 oz.	.65	3.25

Grafting Wax

Our own make; very superior. Packed in pound and half-pound packages only.

Price, pound, 25c.

Garden Stakes

	Weight per 100	Price	
Wood, painted.	100	1000	
12x1½ inches	2½ lbs.	\$.80	\$ 7.50

Bamboo Plant Stakes

Six feet long. Cannot be mailed. Weight 12 lbs. per 100.

25c doz.; 75c per 100; \$6.00 per 1000.

Erickson's Exterminator

The most effective method for exterminating gophers, squirrels, and other burrowing pests. It is used by simply lighting the fuse, inserting the cartridge in the burrow, and covering with dirt. Cannot be mailed. 5c each; \$5.00 per 100.

No. 44

Gopher Trap

A box and spring arrangement. Catches them every time. Weight 1 lb. 25c each; \$2.50 dozen.

LILLY'S NO. 2 PRUNING SHEAR

The best pruning shear made. They are made for real service, and will be appreciated by the nurseryman and orchardist. The material is of the very best; they are strong, durable, and are the easiest cutting pruning shears made. Each shear is carefully tested and is fully guaranteed. If broken within six months with ordinary usage, we will replace them. They are fitted with adjustable nut and brass springs. Length $8\frac{3}{4}$ inches.

Price \$2.50, postpaid.

No. 4 Pruning Shear

This, although a cheaper pruner, is good for ordinary light work. It may also be used for orchard work, but is built on a lighter design than the No. 2 and No. 3. It has polished blades and black filled handles. Length $8\frac{1}{4}$ inches.

Price 80c, postpaid.

LILLY'S Tree Pruner

The best pruner for heavy work. They are 28 inches long over all, handles 22 inches long. They are forged from a very high grade of tool steel, finely tempered, and the workmanship is of the best. They have lock nuts which cannot work loose.

Price \$2.50, postpaid.

Waters Tree Pruner

A pruning shear mounted on a long pole. Indispensable for pruning tops of trees.

Cannot be shipped by parcel post.

With 8-foot pole. \$1.00
With 10-foot pole... 1.10
With 12-foot pole... 1.25

SOLUBLE SULPHUR COMPOUND is the latest and best form of the standard sulphur spray. It is fully as effective as Lime and

Sulphur Solution, is more convenient, and you do not have to pay freight charges on water. See description on page 130.

No. 3 Pruning Shear

This is also an excellent shear, although the material and workmanship are not quite so good as the No. 2. The pattern is the same. They have polished blades, but the handles are black. Length $8\frac{3}{4}$ inches.

Price \$1.50, postpaid.

Picking Shear

A combined shear and holder. In pruning rose bushes or shrubbery, or picking flowers or fruit, the prunings, flowers or fruit are held firmly by the shears, leaving the other hand free. As a grape picker there is nothing equal to it. Length $6\frac{3}{4}$ inches.

Price 75c, postpaid.

MASTICA

For glazing greenhouses, etc. Better than putty, and much easier to apply. It is applied with a special machine, listed below. One gallon is sufficient for 290 lineal feet. In one-gallon cans only. Weight 15 lbs.

Price \$1.60 per gallon.

Mastica Machine

For applying Mastica. Weight 20 ounces.

Price \$1.40, postpaid.

Peerless Glazing Points

For greenhouse and hot-bed sash. Only two required for each pane of glass, and so constructed that the glass cannot slide. Weight per 1,000, 1 lb.

Price 75c per 1,000, postpaid.

Simplex Weed Puller

A simple and effective appliance for pulling weeds from lawns and other places. It does the work easily, without back-ache, and gets the entire root, so that they will not grow again.

Price, \$1.00,
postpaid.

THE G. B. LEWIS CO. BEE SUPPLIES

The Line That is Nearest Perfect in Workmanship and Material

WE are fortunate in having the Pacific Coast agency for the celebrated G. B. Lewis Co. Bee Supplies, which are known by bee keepers to be the standard of perfection in bee hives, sections, etc. The G. B. Lewis Co. has been manufacturing bee supplies for more than forty years, have the business systematized to a nicety, and have earned the reputation of turning out the best and most uniform line of bee supplies.

Their goods are made from the best materials and the workmanship is perfect. The hives, supers, etc., are made from clear eastern white pine, which appears to be the only material suitable for that purpose. The sections are made from Wisconsin basswood, are white, highly polished, without flaw, and are perfectly uniform. All parts are exact in size, with perfect joints, and no difficulty is ever experienced in putting them together. Every part fits perfectly.

These goods are fully guaranteed by both manufacturer and ourselves, and if they are not found to be strictly as advertised, and entirely satisfactory in every way, they may be returned to us.

Hives, supers, etc., are packed in bundles of five, in the flat; hence, prices are shown for lots of five and we can furnish them at those prices in lots of five and multiples of five only. When they are ordered in lots of less than five they will be nailed up and the price shown for one will apply.

Prices shown are for goods f. o. b. Seattle or Port-

land. If they are to be shipped by parcel post, or by freight or express to a station at which there is no agent, remittance must include a sufficient amount to prepay transportation charges. To enable you to figure amount to prepay charges, we have shown shipping weight of the various articles. In case too much is remitted, the balance will be refunded promptly.

Bee-keeping is a profitable and pleasant occupation, and there are few of our customers who could not advantageously keep a few colonies, at least, and thus supply their tables with one of the most delicious and healthful foods, in addition to deriving considerable profit from the sale of surplus honey.

The work is light, easy, and there is a fascination about it that makes it worth while even if no pecuniary profits were derived. Any person who is a lover of nature will be delighted with the intelligence displayed in the everyday life of a colony of bees. A study of their little world discloses system, government, social economy, industry and perseverance that we humans would do well to copy.

Many have not entered into the business on account of a fear of stings, but that is a fallacy. Bees are really gentle little things, and use their stings only for defense.

To obtain satisfactory results from bees, proper appliances and fixtures must be provided, and the best of these appliances will be found to be the most economical in the end.

If bee supplies are required in very large quantities, please advise articles and quantities wanted and we will quote lowest possible quantity prices.

A Few Suggestions for Beginners

BEE-KEEPING is not only interesting but is profitable as well, and judging from the experience of others, we are certain, should you commence this industry, you will continue and increase until you will find that you are deriving no small income from this source every season.

We have endeavored to give here a few points which will aid a beginner in getting properly started.

BUYING BEES.

We do not recommend anyone without experience to start with more than about five colonies of bees and the hives and implements necessary to handle them. We suggest buying bees as close to home as possible, provided you get them cheap enough. We would not advise any beginner in bee-culture to start in buying bees in box hives, or frame hives with crooked combs, as the transfer of bees out of such hives into new ones is usually not an agreeable job and should rather be left to some one who has had experience in that kind of work.

Select colonies strong in bees, housed in a well constructed hive of standard size; make sure that all the combs are straight (crooked combs depreciate the value of a colony greatly). See that they have sufficient honey to last until new honey is coming in. They should have a good, vigorous queen. Last but not least, make sure that bees and brood are healthy. The best time to buy bees is in spring, about the time of fruit bloom, as then all danger of wintering is past and the colonies being light in weight now, they are more readily moved.

MOVING BEES.

After you have bought bees, the next important thing is to get them safely home. Bees may be moved at any time of the year, except very cold weather in winter. During the fall or spring, when the days are cool, they can be moved with the least expense and trouble. It is always better to go about this carefully and correctly, as follows: Take off the hive cover, tack a wire cloth over the entire top of the hive, and if the weather is cold, stop up the entrance entirely, but if it is warm weather, cover the entrance with wire cloth; now nail enough cleats on the sides of the hive (use nails that will not go through into the inside) to hold all parts together; cover the entrance after dark so as to be sure that all of the bees are in the hive; use an easy riding vehicle for hauling the bees, and drive so as to avoid any sudden jerks or drops, as a quick, hard jar is bad for bee comb at any time or place. After

you get your bees home, put them into the place which you should have prepared beforehand and open the hive entrance at once, but provide yourself with a bee veil and lighted smoker first and blow a little smoke into the hive entrance. Do not have any horses or other live stock near, as they are liable to get stung.

LOCATION OF APIARY.

Any place where there is an abundance of honey-producing plants, and which is not overstocked already, is suitable for the location of an apiary. A locality sheltered from high winds should be given the preference; and if shade by a few tall trees can be had, so much the better. Face the hives to the southeast, if the surroundings allow it. Arrange a solid place for each hive to stand on, four or five inches from the ground. Some use bricks for this purpose; others short pieces of 4x4, or stakes driven into the ground and sawed off square, or especially constructed hive stands.

Make sure that each hive stands level sidewise, and a little lower in front to keep out water.

Keep grass and weeds down in front of the hives.

TRANSFERRING.

In case you have bought your bees in common boxes, or in frame hives that have crooked comb, it will become necessary to transfer them into good hives that are up to date.

It does not pay even to attempt to keep bees in a box hive or any other hive which does not permit the interchange of frames or the handling of bees with ease. The old-fashioned way to transfer from old hives was to cut the combs out and fit them into the frames of the new hives. This was always a great deal of trouble, and a sticky, undesirable job for anybody, especially a beginner. Besides having some smashed bees, plenty of stings, and some crooked combs, the results were very seldom satisfactory, because comb taken from old style hive generally has so many drone cells that it is unfit for use. Some prefer, instead of only a starter, to wire the brood frames, buy medium brood foundation, fasten a full sheet in each frame and imbed the wire in the foundation. Then you can feel assured you will have nice, straight combs with but very few drone cells. Having your brood frames straight, all arranged as above described, and the balance of your new hive nailed up complete, give them two coats of pure white paint wherever they will be exposed to the weather.

If your bees are in box hives, you may next proceed to make what we shall call a hiving-box. Make a box 5 to 8 inches deep, just large enough to exactly cover the bottoms of the old hives, no larger, and leave it open on one side only, with not even a small crack on the other sides. It now being the right time in the year, and you having all things ready for transferring, light a fire in your smoker, put on your bee veil over a hat with a broad, stiff rim and fasten veil closely at the neck, gather up the hiving box and "go for the bees." Move the old hive back about four feet, put the new hive where the old one was, turn the old hive up side down, smoke the bees a little, not using too much smoke, then place the hiving-box squarely over the bottom of the old hive and drum on the side of the hive with two pieces of wood, one in each hand, to drive the bees into the hiving-box. When you have most of them in the box, lift it off gently, carry it to the front of the new hive and dump the bees all out, giving the hiving-box a few quick downward jerks so as to jar the bees loose from the sides. Now take a small broom (don't use feathers, as they anger bees) and quickly brush all clinging bees from the hiving-box; set down and watch closely to see that the queen bee goes into the new hive; she is long and slim and will be easily found among the other bees; you must be sure that she is in the new hive, and if you do not see her going in, look inside for her, and if you do not find her, place hiving-box on old hive and drum the bees up, time after time, until you do find her and are positive that she is in the new hive—she must be there or the transferring will not amount to anything. When nearly all of the bees and the queen are in the new hive, turn the old hive right side up and set it down about twenty inches back of the new hive with the entrance turned sideways from the new hive. Let the old hive alone for twenty-one days (it takes that long for working bees to hatch), then turn it up side down again, place hiving-box on it, drum up the bees and dump them in front of new hive, this time getting all of the bees out. The brood now left in the old hive will be drone brood which you do not want. Now take out all of the nice honey fit for use, take out all of the old combs and render them into beeswax, and your job is completed, and you have left an old box fit for nothing else, perhaps, but kindling wood.

If your bees are in a hive with movable frames, you must proceed with transferring in the same manner as with the box hives, except that you do not turn the hive up side down at all, nor do you use a hiving-box. You simply lift out the frames from the old hive, one by one, carry them over and shake off the bees in front of the new hive. In either case you must not expect to take all of the bees away from the old hive at first, as there should be one-fourth of them left to feed the larvae and to keep the brood warm until twenty-one days are up.

WINTER CARE OF BEES.

Whether bees should be wintered in single walled hives on the summer stand, or in Chaff Hives, or whether they should be housed in a frost-proof

cellar, depends entirely on location, and we therefore advise beginners to follow the practices of the successful bee-keepers in their locality. To winter bees successfully in any locality it is necessary to observe the following: The colony must be strong and have a good proportion of young bees. A good supply of wholesome stores must be present in the hive at the opening of winter. The hive must be arranged to prevent the accumulation of moisture during cold weather.

SPRING WORK.

During a nice warm day in early spring, when the bees are flying freely, examine your colonies; see if they all have their queens yet, and if there is sufficient honey in the hives. If you find one which you are sure is queenless, but is still strong in bees, it may pay you to send for a queen at once, and introduce her according to the directions printed on the cage. If queenless and weak besides, unite with another colony that has a queen, in the following manner:

Lay a sheet of newspaper over the brood-frames of the colony having the queen; tear a round hole about two or three inches in diameter in the center of it; then set an empty brood-chamber, without bottom, on top of it, and hang your queenless colony into it; leave no way for the bees in the upper story to get out except through the entrance of the hive below. By this method they will acquire the same scent as the colony below and unite without any fighting. A week or two afterward you can shake the bees off the upper combs, and store hive and combs away.

Colonies found short of stores should be fed, either by giving them combs filled with honey, or giving them liquid honey in a feeder.

In localities where early flowers are lacking, it often pays to expose a few pans full of flour or corn meal, tightly packed down, which the bees will use as a substitute for pollen. Suitable watering places may also be provided, so the bees will not bother stock at their watering trough.

To avoid worry and work later on, the queen's wings should be clipped during the month of April, when they are most readily found.

If you have not made up and painted your hives for increase, put up sections, etc., during the winter months, be sure to do so now.

To cut surplus foundation to the proper size for sections make an ordinary mitre box about four inches deep, twenty inches long, and as wide inside as the width of the foundation, allowing for a little play. Close up the left end, and starting from this, measure off distances corresponding to the depth of the foundation starters desired, and make the usual saw-cuts at these points, square across. Fill up the box with sheets of foundation, and cut the starters with a scalloped bread knife, using a sawing motion, dipping the knife every cut in strong soap-suds.

SUMMER.

When swarming time commences have your empty hives all ready for receiving the swarms, supplied with starters or full sheets of foundation, and stored in a clean, cool place. If you wish to transfer bees

from box hives, or frame hives with crooked combs, do it as soon as there is enough honey coming in to carry on comb building.

If beginners allow their bees to swarm naturally they are most likely to have good success. After they get more experience they may try their hands at artificial swarming, or the entire prevention of swarming.

When a swarm comes out the bees will usually settle on some suitable object near by. It is not necessary to beat tin pans, etc., to make them do so. After the bees are clustered in a compact bunch, hive them, either by shaking them on top of the brood-frames or in front of the hives. When clustered on the trunk of a tree or a post, it is sometimes necessary to lift them off gently with a ladle, or other instrument, and put them in the hive. If the swarm is clustered very near to the ground it is generally sufficient to shove the entrance of the hive close up to them and use a little smoke in driving them in. At other times, it may be found to be more convenient to carry the swarm to the hive. If you have low trees near your bees, you will find the "Manum swarm-catcher," illustrated in this catalogue, a great convenience.

If you have to be absent from home during swarming hours, you can attach an "Alley queen and drone trap" to the hive expected to swarm. This will catch the queen and thereby prevent the swarm from leaving.

If the colony has swarmed during your absence you will generally find some bees clustered on the outside of the trap. Then get your new hive and put it in the place of the old one; open the trap, find the queen and let her run into the new hive; then take out the frames of the old hives, and shake about three-fourths of all the bees into the new hive; return the frames and give the old hive a new place. It is well to shade a newly hived swarm for a few days.

While bees in the act of swarming are not much inclined to sting, there is once in a while a swarm that is very much aggressive. We would therefore advise you to be always supplied with a bee veil and a smoker, ready for use.

HANDLING BEES TO GET THE MOST SURPLUS.

Mark the hive where the swarm came from, after the swarm is hived; go back and move the old hive to a new location some distance away; then bring up the hive with a new swarm and set it in the same place where the old one stood. This will further strengthen your swarm with all the bees coming home from the fields. When using full sheets of foundation in the brood-chamber you can put your super on in about 24 hours; but if you use starters only in the brood-frames, you had better wait for about three days before giving a super, as otherwise there is some danger of the queen depositing eggs in the sections. As the old colony will be deprived of most of the field bees, you may take the super from it and give it to the swarm. If you do this you should give the old colony a new super within two weeks.

If you do not want to watch for swarms, then when new honey begins to come in, and the season

appears favorable for a fair crop of honey, set a new hive with starters in the place of each hive containing a strong colony, as in the above plan, open the hive, look up the queen and hang her with a frame of brood in the hive, then shake or brush most of the bees in front of the new hive. If you do not care for increase, set the old hive some distance away for a few hours or a day, until the artificial swarm has quieted down, then put it by the side of the new hive, and after the brood has hatched out, shake off the remaining bees, as before, and store away the old hive. If you wish to make sure of saving the old queen any young queens in the old hive should first be removed; otherwise, pay no attention to them. When the swarm has built all its combs, look over them carefully, and exchange all those having considerable patches of drone comb for straight worker combs from the old hive. If you wish increase, then remove the old hive at once to a new location after the first shaking, making sure it is supplied with two or three good queen-cells nearly ready to hatch. Usually in going over the yard in this way plenty of combs with queen-cells will be found, which should be set aside for this purpose. Never shake a comb with queen-cells to get the bees off, but always brush it. If the plan is applied annually in a wholesale way without exchanging any combs, and all old combs melted up, the apiary will remain immune from foul brood.

Beginners should be careful not to apply this method to colonies so weak as to be damaged by the operation, or in unfavorable weather, and should be careful to exchange no combs from hives in which there is any suspicion of foul brood.

To avoid absconding of either natural or forced swarms, the queen should be clipped. (See "Spring Work.") When a natural swarm issues with a clipped queen, the queen should be looked for first as she crawls around before the hive trying to fly, and temporarily caged. While the swarm is in the air, the new hive is to be set in the place of the old. When the bees commence to return of their own accord, or when they are brought back on the bough on which they have clustered and are shaken in front, the queen is to be liberated at the entrance, making sure she goes into the hive.

When the first super you have given to a colony is about three-fourths filled, put another one underneath it, by the time this second super is three-fourths finished, the top one will usually be completed; if not, you will have to put a third super below these two. As soon as every section in a super is completely capped over it should be removed from the hive. By using the Porter bees-escape you can get the bees out without the use of smoke.

To prevent having a lot of unfinished sections on hand at the close of the season, you should, during the last few weeks of the honey-flow, gradually reduce the number of supers on the hives to one each and finally have only a super on the very strongest and best working colonies to finish up those sections nearest complete.

Unfinished sections should never be put on the open market. If they are not much soiled by bee-glue they may be extracted and kept over for next

season; otherwise we should advise cutting out the combs and melting them up. Sections that are finished, but have been built together, should either be sold around home or rendered.

PREPARING COMB HONEY FOR MARKET.

Have your honey stored in a warm, dry place, free from dust and flies. Put only sections with nice, straight, well-filled and well-capped combs on to the market; scrape off all traces of bee-glue; grade your honey carefully, and put it up in neat, clean shipping cases. Make sure that the front row is a fair representation of the contents of the case. We would advise you to follow the grading rules adopted by the National Bee-Keepers' Association or those of some state or local association in your section.

EXTRACTED HONEY.

As the economical production of extracted honey requires a greater outlay for fixtures than for comb honey such as extracting combs, extractor, capping and storage tanks, etc., it is mostly carried on by specialists, and we shall, therefore, not devote space to it. Honey should be well ripened in the hive before extracting. The combs of honey must be warm, else it will be difficult to get all of the honey thrown out. The honey-knife should be kept sharp and immersed in hot water when not in use. After the honey is extracted it should be strained through several thicknesses of cheesecloth, and stored in a very warm place for a few days until all air-bubbles have risen to the top and have formed a foam, which should be carefully skimmed off. The honey is then ready to be put into vessels selected for it.

Well-ripened extracted honey weighs 12 pounds to the gallon. All pure extracted honey will granulate, or become solid, some varieties sooner than others.

To bring it back to its former liquid state, put the vessel containing it into another one containing water and heat it gradually, taking care that the water does not come to the boiling point, else the color and flavor of the honey will be injured. After such treatment the honey will generally remain liquid for several months.

ROBBING.

Here the old saying, "An ounce of prevention is worth a pound of cure," is very appropriate. Never leave hives open, or honey exposed, nor manipulate colonies at unreasonable times. See also that there is no chance for bees to get into your honey room. But one of the best preventatives for robbing is to keep all colonies strong, and supplied with queens.

If a colony is getting robbed, contract the entrance and pile some straw loosely in front of the entrance, and sprinkle this with water. Or put a bee-entrance guard in front of the hive. In fact, adopt any ready way to prevent the robbers from gaining rapid access into the hive. Usually only weak, diseased or queenless colonies are getting robbed. Careless and injudicious feeding is also sometimes the cause of robbing. Be especially careful not to get

any robbing started if there is any foul brood in your neighborhood.

FOUL BROOD.

This is a highly contagious disease. It is due to a microbe (*Bacillus alvei*) whose spores are easily transported from hive to hive by the bees themselves in robbing, by the operator, in honey, or in combs changed from one hive to another.

Once established in an apiary it usually spreads, unless speedily and energetically checked, until all of the colonies in the neighborhood are ruined.

The symptoms are: The turning brown of larvae in open cells; many sealed cells have sunken caps, frequently broken in and containing dead larvae in putrid condition, brown or coffee-colored, and ropy in consistency. The latter is the most characteristic symptom of the disease. To determine this, stick a toothpick into the brown mass, twirl it around once or twice, and draw it out; if it adheres to the toothpick and pulls out in the form of a string, you can be assured that it is a case of foul brood. In the more advanced stages of the disease a disagreeable glue-like odor is often perceptible.

TO CURE FOUL BROOD.

Toward evening transfer the bees, simply by shaking them off the combs on to some paper placed in front of the new or clean hive, and run them in. The new hive should be placed where the old one stood, and should contain frames with starters or full sheets of foundation. If possible, the new hive should resemble the old one, otherwise the bees will be confused and enter other colonies and carry the germs of the disease to them. Do not give them combs, as they must use up the honey in their honey-sacs for comb-building to get rid of the spores of the disease.

As the latest experiments have shown that honey from diseased colonies is not safe to feed back to bees unless it has been subjected to boiling for at least one hour, we urgently advise burning up completely all combs of diseased colonies. Do this at night; and after everything that will burn is consumed by fire, bury the rest in a hole two feet deep.

If you wish to save the hive paint the inside of it all over with kerosene, and drop a lighted piece of paper into it. After the whole inside of the hive is slightly charred, smother the fire by putting on the cover. A much handier way is to burn it out with a painter's gasoline torch.

BEEES AND FRUIT CULTURE.

Bees are a great help to the fruit-grower, as they fertilize the blossoms of the fruit trees during a time of the year when other nectar-loving insects are not sufficiently numerous.

As much injury had been done to bee-keepers by the injudicious spraying of trees, laws have been enacted in several states prohibiting the spraying of fruit trees, while in blossom, with poisonous substances.

Experienced horticulturists claim that a week or ten days after the petals of the blossoms have fallen is the proper time to spray for codling moth.

In melting comb on the stove, be careful; the wax

is liable to run over and set fire to your house.

Before pouring the wax into molds, strain it through cheesecloth. Rinse your wax-pans with strong soap-suds, to keep the wax from sticking to them. After pouring the wax allow it to cool very slowly in a warm room, to keep the cakes from cracking. If you get one of the solar wax extractors shown in this catalogue you can produce a better quality of wax with much less trouble.

Whenever you get stung, scrape off the sting as quickly as possible with the thumb nail or a knife; never pull it out, as by doing so you inject more poison into the wound.

Honey is the most healthful sweet known, and its more general use should be encouraged as much as possible.

Bee-keepers should therefore set others a good example, and have honey on their tables at all times. It is cheaper than butter, and children are usually very fond of it. As long as there are so many families who never get a taste of honey, we cannot talk about over-production. Therefore try to induce all your neighbors, friends and everybody else to eat honey.

THE QUEEN.

You may make a change of bees from one stock to another by a change of queens. Before doing this, it is well to know something of the bees to

which you wish to change. Some queen breeders claim that "there is nothing in pure stock." Many very practical ones have devoted several years to the business and have their bees bred up to a strain of excellent honey gatherers who are not descendants of any particular race of bees, but are mixed up with several races, and are simply "hustlers" who do the work and are both gentle and healthy. While we do not criticise those having such bees, we feel partial to the Italian bees, and we think that all that can be desired in honey bees can be found in pure Italian queens (not necessarily imported), bred up "for business," are surely quite enough in the way of beauty, gentleness and profitableness to suit any reasonable requirement.

You can Italianize by purchasing a tested queen, and then introducing her to the colony you wish to change. If the tested queen costs too much to suit you, buy untested queens and introduce them to your bees. Instructions for introducing queens are always included when the queens are sent out, but for a complete treatise on introducing queens and on dividing bees and making more colonies, we refer to any of the standard bee books.

In the foregoing we have, as previously stated, merely endeavored to give a few points which will assist you in getting started, after which it will be to your advantage to obtain one of the good bee books and inform yourself generally.

Bees and Their Homes

A BEE is a little insect belonging to the family of which the scientific name is apis.

Thus the place where bees are kept is sometimes called an apiary, taken from the word apis.

The bee gathers nectar from the flowers, which nectar, after undergoing a chemical process in the bee, becomes honey and is carried to the home of the bee, commonly called a bee-hive. Each hive of bees is known as a colony. Honey is the main food of the bee, and after enough is carried to the hive for it to live on, the balance, sometimes called surplus, is taken from the hive by the bee-keeper to serve as food for the human being. While the amount of honey one bee can carry in a day is almost too small to be appreciable, yet a good colony of bees in a fair season will carry over ten pounds in a single day. Bees then are kept for the production of the honey, which is sold as a staple product to neighbors or to the grocer or to other dealers for profit.

They are also very prolific and by increasing rapidly they help to make the occupation of bee-keeping pay.

Bee-keeping is easy to learn if one commences in a small way, as we advise everyone to do who is beginning. The very best way to learn, while you are also gaining knowledge by actual experience, is to become closely associated with some experienced bee-keeper near you who has kept bees for years, by watching him work among his bees and by asking him questions. We also advise securing some good bee book and subscribing to a bee journal.

Bees, as a great many wrongly suppose, are not, when correctly kept, dangerous. On the contrary, they are little fellows who are pleasantly fascinating and good-natured to one who understands them; unless molested, they will seldom attempt to sting; so harmless are they in fact that bees are kept in large cities in door-yards and on roofs, etc. It is not an uncommon sight in small towns to see yards within the city limits containing hundreds of bee hives. Apparel such as gloves and veils sufficiently protect the bee-keeper while working among his bees. The fear one usually feels in launching in this new enterprise soon gives way to confidence and enjoyment.

"Insect life is ever presenting the most pleasurable surprises to those who study it. Bees, from their wonderful instincts, curious structure and habits, and the interesting relations which they sustain to vegetable life, are most fascinating objects of study. The observant and appreciative bee-keeper is ever the witness of exhibitions that incite wonder and admiration. This is why bee-keepers are always enthusiasts. I know of no class of laborers who dwell more fondly on their work and business than do bee-keepers. A thorough study of the marvelous economy of the honey-bee must, from its very nature, bring delight and admiration. A farmer once said to me, 'Were it not for the generous profits of the business, I would still keep bees for the real pleasure I receive in the business.'"—Cook's Manual.

Honey production is of two kinds—comb honey and extracted honey. The former, as its name suggests, is produced and put on the market in the comb. The latter is what is first produced in the comb but mechanically later taken out of the comb and put on the market in liquid form, in bottles or cans, etc.

We will now turn our attention to the home of the bee, commonly called a bee-hive, the main parts of which are shown by the cuts below.

MAIN PARTS OF A BEE-HIVE.

Floor—This is known in bee supplies as the Bottom.

Living Room—This is known in bee supplies as the Body.

Store Room—This is known in bee supplies as the Super.

Roof—This is known in bee supplies as the Cover.

The Living Room or the Body is the room in which the bees live.

The Store Room or the Super is the room in which the bees store the surplus honey.

The Brood Frame is the Frame or Rack, eight of which are placed in the Body of an Eight Frame Hive and ten in a Ten Frame Hive, thus the two different sizes of hives commonly called the Eight and Ten Frame are determined by the number of frames they contain. These frames are rapidly filled with honey-comb cells by the bees. In some of these cells are deposited honey or pollen, which serves as food, in other cells brood or young is reared; more of the cells are given up to brood and pollen in the spring and summer and less to honey; while in the fall and winter just the opposite is true, very little brood or pollen being seen and most of the cells filled with honey.

The Section Holder is just what the name signifies; it is a holder consisting of a bottom slat and two end pieces, which holds the sections when placed in the Super.

The Sections or honey boxes are the little square boxes which are placed into the above section holder and then into the Super, which little boxes are then filled with honey by the bees. These little boxes are made of one piece and fold up into shape like a strawberry box, except that they have no bottom, consisting of the four sides only.

The Best Books on Bee Culture

ABC and XYZ of Bee Culture

Every beekeeper, whether amateur or professional, should not be without this book. It covers the entire subject of beekeeping from beginning to end. Well bound in cloth; 730 pages, printed on fine quality plate paper; profusely illustrated.

Price, \$1.75; postage additional. Weight 3 lbs.

Bee Primer

Written especially for the beginner. If you are going to start with bees, either for pleasure or profit, we know you will find this pamphlet valuable. It is written in plain words, avoiding technical terms. Price 15c,

The Honey Bee

A standard work, written by highest authorities on this subject. It contains all the information required by the beginner as well as the scientific details of the business. Cloth bound; 575 pages; 229 engravings.

Price, \$1.10; postage additional. Weight 2¼ lbs.

DOVETAILED HIVES FOR COMB HONEY

1 1/2-Story Hive, Open.

1 1/2-Story Hive, Closed.

One and One-Half and Two-Story Hives

The Dovetailed Hive as shown above is the Standard Comb Honey Hive. It is furnished in two sizes, eight-frame and ten-frame. If you are beginning to equip a new apiary we recommend the ten-frame.

The above illustrates a 1 1/2 story hive; when two supers are included it is then a 2 story hive for comb honey.

The Bottom as regularly furnished is reversible, so that it can be used either side up, one side forming a 3/8-inch entrance and the other a 7/8-inch entrance for the bees.

The Body or brood chamber is equipped with the Hoffman self-spacing brood frames, eight with the eight-frame hive and ten with the ten-frame hive.

A Division Board is furnished with each eight-frame body, as it is required to fill the space properly when all eight frames are in place. In the ten-frame size, however, it is not furnished, as the ten frames in place fill the space. When a division board is required in a ten-frame hive for the purpose of reducing brood space it can be ordered extra, as listed elsewhere in this catalog.

The Super shown with the above hive is the style most commonly used and is the one always furnished unless you specify otherwise. It takes the regular 4 1/4 x 4 1/4 x 1 7/8 bee-way sections and slotted section holders.

The Separators are the slotted sawed wood style. Equipment includes a follower and springs for squeezing the sections up tight.

The eight-frame size holds twenty-four sections and the ten-frame twenty-eight sections.

As stated, the above super, which is called the No. 1 or regular, is the one most commonly used, but some prefer one of the other styles, which will be furnished at a small additional cost.

The Cover is called the Excelsior style. It is a good substantial cover, flat on the under side and gable roof shape on the top.

HIVES WITH NO. 1 REGULAR SUPERS
FOR 4 1/4 x 4 1/4 x 1 7/8 BEEWAY SECTIONS

No Secs. or Foundation	1 Hive	5 Hives	Weight 5 Hives
1 1/2 Story, 8 Frame.....	\$3.15	\$11.20	143 lbs.
1 1/2 Story, 10 Frame.....	3.25	11.90	152 lbs.
2 Story, 8 Frame.....	3.95	14.05	178 lbs.
2 Story, 10 Frame.....	4.15	15.00	188 lbs.
With Secs. and Foundn.			
1 1/2 Story, 8 Frame.....	3.55	12.65	145 lbs.
1 1/2 Story, 10 Frame.....	3.70	13.50	154 lbs.
2 Story, 8 Frame.....	4.65	16.65	182 lbs.
2 Story, 10 Frame.....	4.95	18.85	192 lbs.

WITH NO. 2, NO. 4, OR NO 3 SUPERS
FOR PLAIN NO BEEWAY SECTIONS

No Secs. or Foundation	1 Hive	5 Hives	Weight 5 Hives
1 1/2 Story, 8 Frame.....	\$3.20	\$11.40	145 lbs.
1 1/2 Story, 10 Frame.....	3.30	12.20	156 lbs.
2 Story, 8 Frame.....	4.05	14.45	182 lbs.
2 Story, 10 Frame.....	4.25	15.60	196 lbs.
With Secs. and Foundn.			
1 1/2 Story, 8 Frame.....	3.60	12.85	147 lbs.
1 1/2 Story, 10 Frame.....	3.75	13.85	158 lbs.
2 Story, 8 Frame.....	4.75	17.10	186 lbs.

A 1 1/2 Story Hive includes Cover, Bottom, Brood-Chamber, one Super and all inside furniture. A 2 Story Hive includes the same with one extra Super.

Hives listed above with "No Sections or Foundation" are complete except Section Boxes and Foundation Starters.

Hives listed above "With Sections and Foundation" are complete and include Section Boxes and sufficient Foundation for one-inch starters for the brood frames and Sections. Most bee-keepers prefer to order the Sections and Foundation separately.

The best books and journals on bee-keeping are listed in the Books section of this catalog.

DOVETAILED SUPERS FOR COMB HONEY

No. 1, or Regular SuperFOR $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{7}{8}$ BEEWAY SECTIONS

This is the same as is shown with the $1\frac{1}{2}$ Story Hive on the preceding page and is the style most commonly used. We always furnish this style unless one of the other styles are specified.

It takes the regular $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{7}{8}$ beeway sections, slotted section holders, slotted sawed separators, and a follower and springs for squeezing the sections tight. The eight-frame size holds twenty-four sections, and the ten-frame twenty-eight sections.

No. 2, or Plain SuperFOR $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$ PLAIN SECTIONS

This super is preferred by some bee-keepers who claim that they get more even and better filled sections. It is the same size as the No. 1, and holds the same number of sections. The difference is in the inside furniture, being equipped with the fence style separator and plain section holders. These section holders take the plain or no bee-way sections, the cleats on the fences taking the place of bee-ways.

The eight-frame size is equipped with six section holders, seven fences and springs, and will hold twenty-four sections. The ten-frame size is equipped with seven section holders, eight fence separators, springs and followe., and will hold twenty-eight sections.

No. 4, or 4x5 SuperFOR $4 \times 5 \times 1\frac{3}{8}$ PLAIN SECTIONS

Another style equipped for the plain or no bee-way sections. It is a trifle deeper than the No. 1 Super, and takes the $4 \times 5 \times 1\frac{3}{8}$ sections standing on end.

Those who favor this style claim that the section shows a greater surface of honey.

The eight-frame size is equipped with six plain section holders, seven fence separators, springs and a thick follower, and will hold twenty-four sections.

The ten-frame size is equipped with eight plain section holders, nine fence separators, springs, and will hold thirty-two sections.

No. 3, or Ideal SuperFOR $3\frac{3}{8} \times 5 \times 1\frac{1}{2}$ PLAIN SECTIONS

The No. 3 or Ideal Super is practically the same as the No. 4 except that it is arranged for the $3\frac{3}{8} \times 5 \times 1\frac{1}{2}$ plain sections, the eight-frame size holding thirty sections and the ten-frame size thirty-five sections.

PRICE LIST: NO. 1 OR REGULAR SUPER

No Sections or Fdn.	1	5	Weight
	Supers	Supers	5 Supers
8 Frame.....	\$.85	\$2.85	35 lbs.
10 Frame.....	.90	3.10	36 lbs.
With Sections and Fdn.			
8 Frame.....	1.15	4.00	37 lbs.
10 Frame.....	1.25	4.40	38 lbs.

PRICE LIST: NO. 2, NO. 4, AND NO. 3 SUPERS

No Sections or Fdn.	1	5	Weight
	Supers	Supers	5 Supers
8 Frame.....	\$.90	\$3.05	37 lbs.
10 Frame.....	.95	3.40	40 lbs.
With Sections and Fdn.			
8 Frame.....	1.20	4.25	39 lbs.
10 Frame.....	1.30	4.65	42 lbs.

EMPTY SUPERS: ANY OF ABOVE STYLES

Outside shell only, without any inside fixtures.	1	5	Weight
	Supers	Supers	5 Supers
8 Frame.....	\$.45	\$1.60	20 lbs.
10 Frame.....	.50	1.65	20 lbs.

Hives, Supers, etc., are packed in bundles of five, knocked down.

COVERS FOR DOVETAILED HIVES

Excelsior Cover

The Excelsior is the cover regularly furnished with the Dovetailed Hive, and is the style we always ship unless the order specifies one of the other styles. It is a combination of a flat and gable cover, being flat on the under side and slanting like a gable on the top.

Colorado Cover

This cover has a rim which allows it to drop partly over the top edge of the hive, effectually keeping out rain and snow. The rim also allows for an air space of about two inches which is desirable in arid sections, preventing the intense heat of the sun's rays from heating the super.

It is intended to be used in connection with an inner cover, which is provided with a hole for a Porter Bee Escape, so that it can be used as a bee escape board.

Ventilated Gable Cover

This style is preferred by some who wish a double cover, and is very desirable in extremely warm climates with little or no shade.

It is constructed of $\frac{3}{8}$ -inch boards, the ends of which slide into grooves in the end cleats. As there is an open space in the two side edges between the top and bottom boards, constant circulation of air is permitted. If desired, this style is furnished instead of the Excelsior without extra charge.

Metal Roof Cover

One of the latest designs, and rapidly gaining favor with many bee-keepers. It has all the advantages of the Colorado Cover and is lighter and flat on top. It is strong, simple, and the top is covered with metal roofing, making it absolutely tight. It is used in connection with an inner cover, the same as the Colorado Cover.

PRICE LIST: COVERS FOR DOVETAILED HIVES

Style and Size.	1 Cover	5 Covers	Weight 5 Covers
8 Frame Excelsior.....	\$.55	\$2.15	26 lbs.
10 Frame Excelsior.....	.60	2.30	27 lbs.
8 Frame Ventilated Gable.....	.55	2.15	25 lbs.
10 Frame Ventilated Gable.....	.60	2.30	27 lbs.
8 Frame Colorado, Inner Cover....	.75	3.15	40 lbs.
10 Frame Colorado, Inner Cover....	.80	3.30	42 lbs.
8 Frame Metal Roof, Inner Cover	.75	3.15	38 lbs.
10 Frame Metal Roof, Inner Cover	.80	3.30	40 lbs.

Colorado and Metal Roof without Inner Cover, deduct 14c.

We handle only one grade of hives: The G. B. Lewis Co. eastern white pine; the best.

HIVE BODIES, BOTTOMS AND STANDS

One-Story Dovetailed Hives

This is the same as the four styles 1½ and 2 Story Hive for Comb Honey, and includes the same equipment, with the exception that no super is included. It consists of a Dovetailed Body or Brood Chamber with Hoffman self-spacing brood frames, an Excelsior Cover, and a Reversible Bottom. It is also the same as a 1 Story Hive for Extracted Honey.

Including Dovetailed Body, Excelsior Cover, Reversible Bottom, and Hoffman Self-Spacing Brood Frames.		Hive 1	Hives 5	5 Hives Weight
1 Story, 8 Frame. Without Foundation Starters.....		\$2.30	\$8.35	108 lbs.
1 Story, 10 Frame. Without Foundation Starters.....		2.35	8.80	116 lbs.
1 Story, 8 Frame. Including Foundation for One-Inch Starters.....		2.40	8.70	110 lbs.
1 Story, 10 Frame. Including Foundation for One-Inch Starters.....		2.45	9.20	118 lbs.

Dovetailed Bodies or Brood Chambers

Board and Metal Rabbets. With Brood Frames, Division	Body 1	Bodies 5	5 Bodies Weight
8 Frame	\$1.30	\$4.75	66 lbs.
10 Frame	1.30	4.90	71 lbs.
Sides, Ends and Metal Rabbets only. No Brood Frames or Division Boards.			
8 Frame	.75	2.95	35 lbs.
10 Frame	.80	3.10	40 lbs.

Reversible Bottom

The Reversible Bottom is the regular style furnished with the Dovetailed Hives. It is constructed of 7/8-inch material, and arranged so that it may be used either side up. One side provides a 3/8-inch entrance and the other a 7/8-inch entrance. It is the best and simplest.

	1 Bottom	5 Bottoms	Weight 5 Bottoms
8 Frame Hive Bottom	\$.45	\$1.65	23 lbs.
10 Frame Hive Bottom	.50	1.75	27 lbs.

Hive Stand

Hives should never, under any circumstances, be set directly on the ground. The dampness, besides being detrimental to the bees, rots the bottom boards. This stand is serviceable, low-priced, and is the best arrangement for keeping hives off the ground.

	1 Stand	5 Stands	Weight 5 Stands
8 Frame Hive Stand	\$.30	\$1.05	30 lbs.
10 Frame Hive Stands	.30	1.05	35 lbs.

Hives, Supers, Covers, etc., are packed in bundles of five, in the flat. The price of five will apply on bundles of five or multiples of five. When one only, or less than five, is ordered, it will be nailed up, and the price shown for one will apply.

DOVETAILED HIVES FOR EXTRACTED HONEY

Extracting Hives with Two Regular Bodies

This is the most popular and the most practical hive for the production of extracted honey. As shown above, it consists of two full-sized bodies with brood frames for each.

It consists of two regular Dovetailed Bodies equipped with Hoffman Self-Spacing Brood Frames, Excelsior Cover and Reversible Bottom.

If desired, we also furnish it with Foundation for one-inch starters, as listed opposite, but most bee-keepers prefer to purchase the foundation separately.

HIVES WITH TWO DEEP BODIES

Without Fndn. Start'rs.	1 Hive	1 Hives	Weight 5 Hives
2 Story, 8 Frame Hive.....	\$3.60	\$13.05	174 lbs.
2 Story, 10 Frame Hive.....	3.65	13.70	187 lbs.
With Found'n Starters.			
2 Story, 8 Frame Hive.....	3.85	13.75	175 lbs.
2 Story, 10 Frame Hive.....	3.95	14.35	188 lbs.

Extracting Hives with Shallow Extracting Supers

This style has Shallow Extracting Supers, $5\frac{3}{8}$ inches deep, equipped with Shallow Extracting Frames $5\frac{3}{8}$ inches deep, and is adapted to localities where the honey flow is short and colonies of moderate strength.

SHALLOW EXTRACTING SUPERS

With Shallow Frames and Follower. Without Starters.	1 Super	5 Supers	Weight 5 Supers
8 Frame Super.....	\$.85	\$2.95	35 lbs.
10 Frame Super.....	.95	3.35	42 lbs.
With Found'n Starters.			
8 Frame Super.....	.95	3.30	36 lbs.
10 Frame Super.....	1.00	3.70	43 lbs.

EMPTY SHALLOW EXTRACTING SUPERS

Outside shell only. Without Frames or Follower.	1 Super	5 Supers	Weight 5 Supers
8 Frame Empty Super.....	\$.45	\$1.60	20 lbs.
10 Frame Empty Super.....	.50	1.65	20 lbs.

HIVES WITH SHALLOW EXTRACTING SUPERS

Without Fndn. Start'rs.	1 Hive	1 Hives	Weight 5 Hives
$1\frac{1}{2}$ Story, 8 Frame Hive..	\$3.20	\$11.25	143 lbs.
$1\frac{1}{2}$ Story, 10 Frame Hive..	3.30	12.05	158 lbs.
2 Story, 8 Frame Hive.....	4.00	14.20	178 lbs.
2 Story, 10 Frame Hive.....	4.20	15.40	200 lbs.
With Found'n Starters.			
$1\frac{1}{2}$ Story, 8 Frame Hive.....	3.40	11.95	144 lbs.
$1\frac{1}{2}$ Story, 10 Frame Hive.....	3.50	12.80	159 lbs.
2 Story, 8 Frame Hive.....	4.30	15.20	179 lbs.
2 Story, 10 Frame Hive.....	4.50	16.40	201 lbs.

A One-Story Hive for Extracted Honey, or a Hive Body for Extracted Honey, is the same as the Hive and Hive Body for Comb Honey.

Hives, Supers, Covers, etc., are packed in bundles of five, in the flat. One, or less than five, will be nailed up.

The price of five Hives, Supers, Cover, etc., will not apply on less than full bundles.

INSIDE FURNITURE FOR BEE HIVES

Hoffman Frame

The Hoffman Self-Spacing Frame is the style regularly furnished with the Dovetailed Hive. It is the most popular and undoubtedly the best hanging, self-spacing frame ever designed.

The under side of the thick top bar has a double groove, into one of which the foundation is inserted and into the other a long wedge-shaped strip which holds the foundation securely in place.

Shallow Extracting Frame

The above is the extracting frame, $5\frac{3}{8}$ inches deep, used in the Shallow Extracting Super. It has the self-spacing Hoffman end bar and is end spaced with staples in the same way.

Division Boards

One of these boards is included with each Dovetailed Hive, and is used as a follower with the frames. It is not used with the Ten-Frame Hives except in case of weak swarms for reducing brood space. They are also furnished for Shallow Extracting Supers.

PRICE LIST: DIVISION BOARDS

	1	10	Weight 10
Division Boards, in flat.....	\$.10	\$.85	15 lbs.
Division Boards, nailed.....	.15	1.05	15 lbs.
Shallow Division Boards, flat	.10	.75	10 lbs.
Shallow Division Boards, nail	.15	.95	10 lbs.

Metal-Spaced Frame

This style is being used by some bee-keepers in localities where propolis is very abundant, sticky and hard, causing the wooden projections of Hoffman endbars to split off when frames are pried apart. The stamped metal spacing device shown above overcomes this trouble. This metal spacer is superior to other similar spacers as it has less surface contact.

PRICE LIST OF FRAMES

In flat, including nails.	10	100	Weight 100
Self-Spacing Hoffman.....	\$.40	\$3.50	47 lbs.
Metal Spaced.....	.50	4.25	50 lbs.
Shallow Extracting.....	.35	3.00	28 lbs.

Super Cover

These are also known as Inner Covers for Colorado and Metal Roof Covers, and as Bee Escape Boards. There is a hole in the center for the insertion of a Porter Bee Escape when desired.

SUPER COVER, INNER COVER, OR BEE ESCAPE BOARD

	1	10	Weight 10
In flat	\$.15	\$1.40	20 lbs.
Nailed up	.20	1.60	20 lbs.
Nailed, with Bee Escape.....	.35	3.00	21 lbs.

Followers

For use in No. 1 Supers to squeeze sections tight.
Price: 1, 5c; 10, 30c. Weight: 10, 3 lbs.

When ordering goods to be shipped by parcel post, do not fail to remit sufficient to pay postage.

Super Springs

These springs are used for holding sections tight in supers, and are much superior to any wedging device. Weight, $1\frac{1}{2}$ lbs. per 100.

Price: 1c each; 80c per 100; \$6.50 per 1,000.

Section Slats

Slotted Section Slats are $\frac{1}{4}$ inch thick, cut same shape as sections, and are same as bottom slat for Section Holders. The Ideal Section Slats are used with No. 3 Super.

Slotted Section Holder

This is the style furnished with the No. 1 or Regular Dovetailed Super for Bee-way Sections.

Plain Section Holder

This is the style furnished with the No. 2 Super for $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$ Plain Sections.

No. 4 Section Holder

This style is furnished with the No. 4 Super for $4 \times 5 \times 1\frac{3}{8}$ Plain Sections.

Slotted Separators

Slotted Separators are furnished with the No. 1 or Regular Dovetailed Supers in connection with the Slotted Section Holders.

Plain Separators

Plain Separators without slots are used in the old style T tin supers without section holders.

Fence Separators

No. 2 or P Fence. Used in No. 3 or Ideal Super with Plain Section Holders and $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$ Plain Sections.

No. 3 or I Fence. Used in No. 2 or Plain Super with Plain Section Slats and $3\frac{3}{8} \times 5 \times 1\frac{1}{2}$ Plain Sections.

No. 4 or 4×5 Fence. Used in No. 4 or 4×5 Super with Plain Section Holders and $4 \times 5 \times 1\frac{3}{8}$ Plain Sections.

S Fence. Used with $4\frac{1}{4} \times 4\frac{1}{4}$ Plain Sections in Slotted Section Holders.

PRICE LIST

	10	100	Weight 100
Slotted Section Slats.....	\$.20	\$1.40	15 lbs.
Ideal Plain Section Slats.....	.15	1.25	18 lbs.
Slotted Section Holders.....	.30	2.60	30 lbs.
Plain Section Holders.....	.25	2.30	30 lbs.
No. 4 Section Holders.....	.25	2.30	35 lbs.
Slotted Separators.....	.15	1.30	8 lbs.
Plain Separators.....	.15	1.10	6 lbs.
Fence Separators, any style....	.25	2.40	12 lbs.

Metal Parts for Hives

	10	100	Weight 100
Tin Rabbets, 12 inch.....	\$.15	\$1.40	7 lbs.
Tin Rabbets, 14 inch.....	.15	1.40	8 lbs.
T-Tins, 13 inch.....	.15	1.40	7 lbs.
T-Tins, 15 inch.....	.20	1.55	8 lbs.
Flat Tins, 13 inch.....	.10	.60	3 lbs.
Flat Tins, 15 inch.....	.10	.75	4 lbs.

All prices quoted in this catalog, except when otherwise specified, are for goods F. O. B. Seattle or Portland. If goods are to be shipped by parcel post, or by freight to a station where there is no agent, remittance must include amount to prepay charges.

Lewis Hives and Furniture are made right—no rough edges or badly fitting parts.

Queen Excluding Honey Boards

Queen Excluding Honey Boards are used to confine the queen to the brood-chamber, and are very generally used in the production of extracted honey.

Wood and Wire Excluder

We consider this the best Excluder on the market, and it is becoming more popular each year. It is superior to the perforated metal, as it presents smooth, round edges for the worker bees to pass, and the spaces are more exact.

Wood and Zinc Excluder

This is a popular style. It consists of strips of zinc with two rows of holes placed between wood slats, and has a wood rim.

Wood Bound Zinc Excluder

Another style of perforated metal excluder which is used by some bee-keepers, but we do not consider it as good as either of the others.

Unbound Zinc Excluder

This Zinc Excluder is simply a sheet of perforated metal. They are placed directly on top of the frames and allow the bees to pass through the holes directly over the spaces between the frames.

QUEEN EXCLUDING HONEY BOARDS

	1	10	Weight
Wood and Wire, 8-frame.....	\$.45	\$3.75	24 lbs.
Wood and Wire, 10-frame.....	.50	4.25	28 lbs.
Wood and Zinc, 8-frame.....	.30	2.45	14 lbs.
Wood and Zinc, 10-frame.....	.30	2.65	16 lbs.
Wood Bound Zinc, 8-frame.....	.25	2.30	10 lbs.
Wood Bound Zinc, 10 frame ..	.30	2.50	11 lbs.
Unbound Zinc, 8-frame	.25	1.70	6 lbs.
Unbound Zinc, 10-frame.....	.25	1.90	7 lbs.
Unbound Zinc, 16x20	.30	2.10	8 lbs.

Queen Excluding Zinc

We furnish full sheets and strips of perforated zinc for those who require special excluders and wish to make them themselves.

Full Sheets, 32x96 inches. Weight 7 lbs.....\$2.00

Cut to order. Per sq. ft. Weight 1/2 lb..... .15

Strips, two rows of holes, 13/16 inches wide,

19 1/8 inches long. Per 100, weight 5 lbs..... 1.50

Wire for Frames

When full sheets of foundation are used in brood frames we recommend wiring the frames as shown above. All Hoffman end bars are properly pierced for wire.

3/4-oz. spool No. 30 Tinned Wire, wt. 2 oz.....\$.05

1/4-lb. spool No. 30 Tinned Wire, wt. 6 oz..... .15

1/2-lb. spool No. 30 Tinned Wire, wt. 10 oz..... .25

1-lb. spool No. 30 Tinned Wire, wt. 18 oz..... .35

5-lb. spool No. 30 Tinned Wire, wt. 6 1/2 lbs..... 1.35

Write for special prices on Bee Supplies in large quantities, stating quantity wanted.

TOOLS AND APPLIANCES FOR BEE KEEPERS

Lewis Section Squeezer

The best device for putting together sections. It is simple, compact, and can be easily adjusted for any size section.

It works perfectly and quickly, and for those who have a large quantity of sections to fold there is nothing better.

Weight, 13 lbs. Price.....\$2.75

Handy Section Press

This is the lowest priced section former, and is very useful if you have only a small quantity of sections to fold. It may be attached to a bench, post, or wall.

Weight, 15 oz. Price55c

Colorado Section Press

This is a very good section former and one that has been used by many of the largest Colorado beekeepers with entire satisfaction.

It is a foot power machine, and unlike other low-priced devices for this purpose, it is adjustable for any size section.

Weight, 8 1/4 lbs. Price\$1.75

Lewis Section Former

This is a simple device for folding sections, the price is low, and for a limited quantity it is the best.

Weight, 9 lbs. Price\$1.25

Lewis Foundation Fastener

This is undoubtedly the best machine on the market for fastening starters in sections. It can be securely fastened to a wall or table, materially assisting in the work and avoiding the danger of overturning the lamp.

As it can be used with any ordinary lamp, no lamp is furnished with it. Weight 7 1/2 lbs. Price\$1.25

Rauchfuss Combined Section Press and Foundation Fastener

For those who prefer a combined machine for folding sections and fastening starters in one handling, we consider this the best on the market.

Weight, 12 lbs. Price\$3.00

Parker Fastener

For the small bee-keeper this is a simple and low priced device for fastening 4 1/4 x 4 1/4 sections.

Weight, 1 lb. Price, 40c

Daisy Foundation Fastener

While this is a very good machine, it is not equal to the Lewis Foundation Fastener. It is furnished with either one of three sizes of plates, for 4 1/4, 3 3/8, or 4-inch sections. Unless size is specified, we furnish the plate for 4 1/4-inch sections. It may be used with any ordinary lamp. We furnish it either with or without lamp.

With Lamp, weight 6 1/2 lbs., price\$1.40

Without Lamp, weight 6 lbs., price1.15

Extra Plates, weight 1 lb., price20

Van Deusen Wax-Tube Fastener

A handy tool for fastening foundation to plain top-bars. It will feed a fine stream of hot wax between the foundation edge and the wood, cementing them together.

Weight, 5 ounces. Price25c

Carlin Foundation Cutter

Very convenient for cutting foundation into any desired size. Weight, 3 oz. Price20c

Spur Wire Imbedder

A very handy tool for imbedding the wire into the foundation when wire is used in frames in connection with full sheets. Weight, 3 oz. Price.....25c

Hive Scraper

A very handy tool for scraping hives, supers, bottom boards, etc.

Weight $\frac{1}{2}$ lb. Price.....20c

Hive Tool

Made of rickelled steel. A very useful scraper and pry. Weight 6 oz. Price.....50c

German Bee Brush

A very popular style of bee brush. It is durable and will probably outwear the lower-priced brushes. Weight 7 ounces. Price.....30c

Dixie Bee Brush

The best bee brush on the market. The strands are soft and pliable and the brush is long enough to reach clear across a frame, so that one or two sweeps should clear the comb of bees.

Weight 9 oz. Price.....20c

Cogshall Bee Brush

One of the oldest styles, and preferred by some, although we do not consider it as good as either of the others. Weight 6 oz. Price.....20c

Bingham Honey Knife

An improvement over the old Bingham knife, having flanges on the shaft, providing a grip for finger and thumb. Weight 12 oz. Price.....80c

NEW BINGHAM BEE SMOKER

Patented

Bingham Bee Smoker

The best smoker on the market. It includes all new improvements; direct draft, bent cap, wire handles, inverted bellows and soot burning device. Furnished in four sizes.

Corneil Smoker

Another good smoker. It is strong, well made and modern. Furnished in two sizes.

Danzenbaker Smoker

A combination cold and hot blast smoker, popular with many beekeepers.

Clark Smoker

A very popular low-priced cold blast smoker; the best for the price.

PRICE LIST OF BEE SMOKERS

	Size		
	Barrel	Weight	Price
Bingham, Smoke Engine.....	4 in.	2 lbs.	\$1.40
Bingham, Doctor	3 1/2 in.	1 1/2 lbs.	1.00
Bingham, Conqueror	3 in.	1 1/4 lbs.	.90
Bingham, Little Wonder.....	2 1/2 in.	1 lb.	.60
Corneil, Standard	3 1/4 in.	1 3/4 lbs.	1.00
Corneil, Junior.....	2 1/2 in.	1 lb.	.80
Danzenbaker		1 3/4 lbs.	1.15
Clark Smoker		1 1/4 lbs.	.70

When Bee Supplies are to be shipped by parcel post, remittance must include postage.

Queen and Drone Trap

Alley's Queen and Drone Trap is used during swarming time to prevent the escape of swarms. When the swarm comes out, the queen, being unable to pass the wire queen excluder, passes into the upper compartment through the wire cones. The trap can then be taken off the hive, the hive removed, and the trap placed on another hive in the old location.

In a very short time the swarm will return, when the slide in the trap may be drawn, allowing the queen to pass downward in with the swarm.

The trap can also be used to prevent mated or undesirable drones from crossing with young queens on their mating flight. The drones, failing to pass the wires, pass upwards through the cones.

Weight 1 lb. Price.....60c

Bee Entrance Guard

To a limited extent this accomplishes the purpose of the Queen and Drone Trap, but has no compartment in which to trap the queen or drones, only confining them to the hive.

Weight 1/2 lb. Price.....25c

Honey House Escape

For use on doors and windows of extracting rooms or other places where bees get in and you wish them to get out without possibility of returning.

Weight 2 oz. Price, 25c each; \$2.50 per doz.

Porter Bee Escape

The Bee Escape is placed in the hole for that purpose in the Super Cover or Honey Board, and avoids the necessity of smoking and of shaking heavy supers to get the bees out.

Price, postpaid, 20c each.....\$1.90 per doz.

BEE ESCAPE WITH HONEY BOARD

Super Cover or Honey Board for either 8-frame or 10-frame hive, nailed up, with Bee Escape. Weight 2 lbs. each.

Price, 35c each; 10 for.....\$3.00

Bee Gloves

These gloves have long sleeves and the material is durable and practically sting-proof. Three sizes, large, medium and small.

Weight 9 oz. Price.....60c

Bee Veils

These veils are made of the best material and are very durable. The Globe Veil is the most popular, especially with those who are a little timid, as it has a folding metal frame which holds the net away from the face.

Bee Veil, Mosquito Bar.....	\$.30
Bee Veil, Cotton	.50
Bee Veil, Cotton with Silk Face.....	.60
Bee Veil, All Silk	.90
Globe Bee Veil.....	1.00
Extra Net for Globe Bee Veil.....	.60
Bee Hat; flexible rim; fits any head.....	.30

Hive Tent

Made of netting. Very convenient for setting over hives when introducing queens, transferring, etc., when robbers are troublesome. Cannot be shipped by parcel post.

Weight 6 lbs. Price.....\$3.00

There is profit and pleasure in bee-keeping. If not already interested, investigate it.

Hive Clamps

For fastening together the various parts of hives when they are to be moved. Made of malleable iron. Weight, 10 pairs $1\frac{1}{2}$ lbs. Price, with screws, per pair, 5c; 10 pairs.....40c

Hive Hooks

Used for the same purposes as the Hive Clamps. Weight, 10 pairs, $1\frac{1}{2}$ lbs. Price, with screws, per pair.....5c
10 pairs30c

Hive Staples

For the same purposes as Hive Clamps and Hive Hooks. Two inches wide, points three-quarters of an inch long. Price, per pound 20c; five pounds.....70c

Alexander Feeder

The best and most popular feeder on the market. If desired, it may be left in the hive the entire season, and if there is a dearth of honey a hundred colonies can easily be fed in a few minutes by simply moving the end slide and pouring in the feed. As the feed is given to the bees at the rear of the hive, without opening it, there is no disturbance.

Doolittle Division-Board Feeder

This is also a very popular feeder. It is the same size as a brood frame or division board, and hangs in the brood chamber in the same way. To feed, it is only necessary to move the cover back far enough to expose the opening, through which the feed is poured. The bees are supplied without exposing the cluster, and without using smoke.

Miller Feeder

When feeding is left until the last moment, this style is a good one, for with it 10 to 25 lbs. of feed can be supplied at one time. It is placed inside of the super, on top of the brood frames. It has two compartments for syrup.

Simplicity Feeder

This may be placed at the entrance at night, over the brood frames, or in the brood-nest by removing two of the brood frames.

Boardman

Entrance Feeder

A Mason jar, with perforated cap, allows the feed to pass through no faster than the bees can take it. It is furnished without jars but with cap.

Pepper-Box Feeder

This is simply a tin can with perforated cover, which can be filled with feed, inverted, and placed over the frames.

PRICE LIST, BEE FEEDERS

Style	Nailed up		In flat		Weight
	1	10	1	10	
Alexander	\$.30	\$2.70			15 lbs.
Doolittle	.35	3.20	.25	\$2.30	15 lbs.
Miller	.45	4.20	.35	3.20	40 lbs.
Boardman	.25	2.00	.20	1.50	6 lbs.
Simplicity	.10	.90			4 lbs.
Pepper-Box, 1 pint	.10	.80			5 lbs.
Pepper-Box, 1 qt.	.15	1.00			10 lbs.

When feeders are ordered in flat, they should be coated inside with hot wax or paraffine after being nailed up.

Manum's Swarm Catcher

The best device for catching a swarm whose queen is at large with the bees. In using it, open the basket, push it up around the swarm of bees, jar them off the limb, and close the cover by raking it against a limb. Half or more of the bees will be caught in the basket; then suspend the basket near the balance and they will cluster on the outside, and may be dumped into the hive. Weight $3\frac{1}{2}$ lbs.

Price, without pole.....\$1.35

If you require Bee Supplies in large quantities, please give us a list of articles and quantities wanted and we will be glad to quote you special prices.

Benton Queen Mailing Cage

Used for shipping queens by mail, also for introducing. Full instructions are printed on the cage. Furnished without candy. Weight 1 ounce.

Price, 1, 5c; 10, 35c; 100, \$3.00.

Miller Queen Catcher and Introducing Cage

A very handy little arrangement for catching and introducing queens. Weight 1 ounce.

Price.....1, 10c; 10, 90c

Rauchfuss Queen Cage and Cell Protector

This is used in connection with a simple method of raising queens, and can also be used as an introducing cage. Weight 1 ounce.

Price.....1, 5c; 10, 40c

Dadant Uncapping Can

This consists of two 20-inch galvanized cans, one telescoping into the other. The upper can holds the cappings, and the lower the drippings of honey as they percolate through the screen bottom that supports the cappings.

Weight 56 lbs. Price.....\$11.00

The G. B. Lewis Co. bee supplies are the best obtainable, and are fully guaranteed. If not found to be strictly as advertised they may be returned and money will be refunded.

No. 5 Novice Honey Extractor

The Novice is intended for the use of those having a small number of colonies. It is as well built as the larger machines, the difference being in the size and that it is non-reversible. It is equipped for two Langstroth, Hoffman or other frames not over 9 1/2 x 18 1/4 inches. To reverse the frames it is necessary to take them out of the baskets, reverse and replace them. Weight 45 lbs. Price.....\$11.50

No. 15 Cowan Honey Extractor

The Cowan is a reversing machine, and the frames of comb do not have to be taken out to be reversed. The baskets are hung so that they can be turned the other side to by putting the hand down into the can and reversing them while the reel revolves slowly.

These extractors have ball bearings and slip-gear, and are equipped with two baskets. The No. 15 will handle two Langstroth, Hoffman or other frames not over 9 1/2 x 18 1/4 inches, the same as the Novice.

Weight 80 lbs. Price.....\$16.25

No. 25 Automatic Honey Extractor

The Automatic Reversible is a still heavier and larger machine, and, as the name signifies, all that is necessary to reverse the basket is a slight pressure on the brake, which slows down the reel, when the baskets automatically turn the other side to without noise and without stopping the machine. These machines, like the others, have ball bearings and slip-gears. The No. 25 is equipped for four Langstroth or Hoffman Frames. Diameter of can, 29 inches.

Weight 210 lbs. Price.....\$37.50

No. 30 Automatic Honey Extractor

The No. 30 Automatic is the same as the No. 25 except that it is larger and will handle six Langstroth or Hoffman Frames. Diameter of can 34 inches. Weight 280 lbs. Price.....\$52.50

Comb Bucket

For carrying frames to the extracting house. It is dust proof, and catches all the drip.

Weight 5 lbs. Price.....\$1.50

Hersher Wax Press

The Hersher Wax Press is not only the best wax press on the market, but it is an almost perfect device for extracting wax. It is guaranteed to extract within one per cent of all wax contained in the slumgum placed in it if properly operated. Write for circular fully describing this press.

Weight, 150 lbs. Price.....\$29.50

Doolittle Solar Wax Extractor

A low priced extractor for rendering combs by sun heat during the summer. The solar wax extractors are adapted to melting up burr and brace combs and scrapings, but are not suitable for rendering old combs and scrapings containing dirt. Weight 30 lbs. Price.....\$5.00

Nails

We furnish sufficient nails with all hives and other goods which are shipped in flat, but if required can furnish nails as follows:

FINE, FLAT HEAD, BRIGHT WIRE NAILS
One Pound Packages

Length	1 lb.	5 lbs.	10 lbs.	100 lbs.
1/2 inch	\$.20	\$.85	\$1.65	\$14.50
3/8 inch	.20	.75	1.45	12.25
3/4 inch	.15	.65	1.25	10.65
7/8 inch	.15	.55	1.10	9.00

FINE, FLAT HEAD, CEMENT COATED WIRE NAILS
In Bulk

Size	Length	1 lb.	5 lbs.	10 lbs.	Keg
2d	7/8 inch	\$.15	\$.65	\$1.30	\$11.00
	1 inch	.10	.35	.70	6.00
3d	1 1/4 inch	.10	.35	.65	5.45
4d	1 1/2 inch	.10	.35	.65	5.40
6d	2 inch	.10	.35	.65	5.35
7d	2 1/4 inch	.10	.35	.65	5.25
8d	2 1/2 inch	.10	.35	.65	5.25

1	4 1/4	OPEN 1 SIDE
2	4 1/4	OPEN 2 SIDES
3	4 1/4	OPEN 3 SIDES
4	4 1/4	OPEN 4 SIDES
10	4 1/4	PLAIN
11	4 X 5 X 1 1/8	PLAIN
12	3 1/2 X 5 X 1 1/8	PLAIN

Sections

The Lewis One-Piece Bright Polished Sections are the best that are to be had. They are made of Wisconsin basswood, the best material known for this purpose, and each section in every package of the No. 1 grade is perfect in every respect. Sections of the No. 2 grade have some slight defect, but are better than the No. 1 grade put out by some manufacturers.

STANDARD BEEWAY SECTIONS

The 4 1/4 x 4 1/4 x 1 1/8 is the standard section. We can furnish it in four styles, open one, two, three, or four sides. Unless the order specifies otherwise, we always ship the 4 1/4 x 4 1/4 x 1 1/8 open two sides. We can furnish these in either No. 1 or No. 2 grade.

PLAIN SECTIONS

The following Plain or No Beeway sections are carried in stock: 4 1/4 x 4 1/4 x 1 1/2, 4 x 5 x 1 1/8, and 3 1/2 x 5 x 1 1/2. We can furnish these in the No. 1 grade only.

PRICE LIST OF SECTIONS

Quantity	Beewa, Sections			Plain Sections	
	No. 1	No. 2	Weight	No. 1	Weight
100	\$.90	\$.80	7 lbs.	\$.90	6 lbs.
500	3.25	3.00	35 lbs.	3.25	30 lbs.
1,000	6.25	5.75	70 lbs.	6.00	60 lbs.

If sections are required in quantities greater than one thousand, please write for special prices, stating quantity and style wanted.

Frame Spacing Staples

One pound, 20c; five pounds.....\$.75

Prices are F. O. B. Seattle or Portland. If goods are to be shipped by parcel post, or to a station at which there is no agent, remit sufficient to pay transportation.

Safety Shipping Cases

The Safety Shipping Case is something new in the way of a package for comb honey shipment. It is especially adapted for single case shipments or in shipments of less cases than is required to fill a crate or carrier, as these Safety Cases do not require same.

The immunity from damage to honey shipped in these cases over shipments made in the regular cases without carriers will more than make up for the additional cost of this new case.

The safety feature of this case is provided for by making the inside measurement of each size a trifle larger than the regular, which allows for a sheet of corrugated paper to be placed on top and under the sections, as well as at the two ends of the case and at the back; in other words, the case is completely lined with corrugated paper with the exception of the front. In addition to this corrugated lining feature, a heavy pulpboard Safety Carton is furnished; twenty-four cartons to each case.

These Safety Cartons still further protect the honey against damage, and in addition permits of the retailing of comb honey in a very neat and sanitary manner.

A sheet of strong plain paper is also furnished to go under the bottom corrugated sheet, the same as is furnished with the regular case, and for the same purpose.

These cases are furnished in 24-lb. size only.

PRICE LIST, SAFETY SHIPPING CASES

Safety Shipping Cases complete, in the flat, including nails, 2-inch glass, Safety Cartons, corrugated paper lining and paper for bottom.

Size—Sections	10	100	Wt. 100
For 4 1/4 x 4 1/4 x 1 7/8 Sections....	\$3.60	\$34.00	580 lbs.
For 4 1/4 x 4 1/4 x 1 1/2 Sections....	3.50	33.00	560 lbs.
For 4 x 5 x 1 3/8 Sections....	3.50	33.00	560 lbs.

Unless the order specifies otherwise we will ship cases for 4 1/4 x 4 1/4 x 1 7/8 sections.

Safety Cartons

Additional Safety Cartons for use with Safety Shipping Cases; for 4 1/4 x 4 1/4 x 1 7/8, 4 1/4 x 4 1/4 x 1 1/2, or 4 x 5 x 1 3/8 sections, weight 5 lbs. per 120. Price:

120	\$0.50
1200	4.70

Regular Shipping Cases

The regular style shipping case, equipped with a sheet of corrugated paper for the bottom of the case and a sheet of strong plain paper to go under the corrugated sheet, so that if there should be any leakage it will be caught and not run through on the other cases.

When shipping a quantity of comb honey in these cases, the cases should be packed in crates or carriers, cushioned with about two inches of straw to absorb the jar when handled.

As the 24-lb. case is most practical, we no longer carry the 12-lb. case, and can furnish the 24-lb. case only.

TWENTY-FOUR POUND SHIPPING CASES

Complete, in the flat, including nails, 2-inch glass, corrugated paper and plain paper.

Size—Sections	10	100	Wt. 100
For 4 1/4 x 4 1/4 x 1 7/8 Sections....	\$2.40	\$22.00	360 lbs.
For 4 1/4 x 4 1/4 x 1 1/2 Sections....	2.30	21.00	340 lbs.
For 4 x 5 x 1 3/8 Sections....	2.20	20.00	340 lbs.
For 3 5/8 x 5 x 1 1/2 Sections....	2.20	20.00	340 lbs.

If the order does not specify size, we always ship cases for 4 1/4 x 4 1/4 x 1 7/8 sections.

Five-Gallon Cans (60 lbs.)

This style can is in general use for shipping extracted honey. They are packed in strong re-shipping cases containing two cans each.

Two Cans, including case. Weight 10 lbs.....\$1.00
Ten Cases, two cans each. Weight 100 lbs..... 9.00

One-Gallon Cans (12 lbs.)

One Gallon Square Cans with Screw Tops, packed in re-shipping cases containing one dozen cans.

One Case, containing 1 doz. cans. Wt. 20 lbs....\$2.25
Ten Cases, 1 doz. cans each. Wt. 200 lbs.....20.00

We pay highest market price for beeswax. Write for quotation.

Fig. 1.

Fig. 2.

Fig. 3.

Comb Foundation

Considering the start given to a colony of bees by the judicious use of comb foundation, the satisfaction of having nice straight combs to handle, and the power to restrain by its use the overproduction of drones, there is no question in regard to the advisability of using it.

Medium Brood Foundation is recommended for use in brood frames and extracting frames only.

If your object in using brood foundation is only to secure straight combs, and you wish to accomplish that as cheaply as possible, a strip one inch wide and $1\frac{1}{2}$ inches long, securely fastened in the center of the top-bar, will be sufficient. The objection to this plan is that the bees will often build a considerable amount of drone comb, which should be removed and replaced with worker comb.

To overcome this difficulty many bee-keepers use full sheets of foundation, as they are then reasonably sure of securing nice, straight, all-worker comb.

As a set of brood combs will last many years, it is worth while to have them as perfect as possible.

In using full sheets of foundation we advise wiring the frames. Wired combs will not break down in hot weather, when colonies are moved, or when honey is extracted from them.

To obtain satisfactory combs it is absolutely necessary to have the hives stand level sidewise.

Full sheets of Light Brood Foundation should be used only when the frames are wired.

Thin Surplus and Extra Thin Surplus Foundation is used in the production of comb honey and as a starter in the sections. If you wish to use only a narrow starter in the sections we recommend the use of Thin Surplus. If you use a full starter, as shown in Fig. 3, we recommend the use of Extra Thin Surplus.

Fig. 1 shows a section with three-cornered starter at top and a very narrow starter, one-half inch, at the bottom.

Fig. 2 shows another form of starter commonly used, and for which we recommend the use of Thin Surplus Foundation.

Fig. 3 is the one referred to above, and for which Extra Thin Surplus Foundation is recommended. As shown, the section is provided with a narrow bottom starter of about five-eighths of an inch, and a full top starter reaching to within about one-quarter of an inch of the bottom starter. This method is considered the most desirable of any.

If you produce comb honey for market, you will do well to adopt the latter method, as you will thereby secure honey that will bear shipment much better.

PRICE LIST, COMB FOUNDATION

Grade	1 lb.	5 lbs.	10 lbs.	25 lbs.
Medium Broodper lb.	\$0.70	\$0.65	\$0.63	\$0.61
Light Brood	.70	.67	.65	.63
Thin Surplus	.75	.72	.70	.68
Extra Thin Surplus	.80	.75	.73	.71

When ordering foundation to be shipped by parcel post, please bear in mind that the gross weight of one pound of foundation is about one and one-half pounds.

SIZE AND NUMBER OF SHEETS PER POUND

We can furnish foundation in the following sizes only.

Medium Brood	$16\frac{1}{2} \times 7\frac{7}{8}$	7 to 8 sheets per lb.
Light Brood	$16\frac{1}{2} \times 7\frac{7}{8}$	9 to 10 sheets per lb.
Thin Surplus	$16\frac{1}{2} \times 3\frac{7}{8}$	28 to 29 sheets per lb.
Extra Thin Surplus ..	$16\frac{1}{2} \times 3\frac{7}{8}$	32 to 33 sheets per lb.

Lewis Observation Hive

A complete bee hive fitted with glass sides through which the life, habits and workings of the busy bee may be observed with safety.

In size and general construction it is the same as our regular One and One-Half Story Eight Frame Dovetailed Hive, complete with Sections, Frames and full sheets of Foundation, set up ready to put the bees in.

The body and super have three sides of glass, with removable panels on sides and back. The entrance is so constructed that the hive may be placed next to a window, allowing the bees to pass in and out without entering the room.

The hive is nicely varnished and fitted with brass trimmings, making it an attractive piece of furniture for any room.

Weight, 47 lbs. Price, complete.....\$8.45

LANGSTROTH ON THE HONEY BEE

By C. P. Dadant

This has long been recognized as a standard work and one of the best books on bees ever published. In its 575 pages of reading matter and illustrations will be found all the latest information on bee culture.

Price, \$1.20, postpaid.

Bee-keepers requiring supplies in very large quantities will please write for special prices.

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Quantity of Seed Required**Quantity per Acre**

Alfalfa	10 to 20 lbs.
Alsike	8 to 10 lbs.
Artichoke	1 oz. to 500 plants, 6 oz.
Asparagus	1 oz. to 500 plants, 1 lb.
Barley	100 lbs.
Beans, dwarf	1 lb. to 100 ft. of drill, 50 lbs.
Beans, pole	1 lb. to 150 hills, 25 lbs.
Beet, garden	1 oz. to 50 ft. of drill, 5 lbs.
Beet, sugar or mangel	5 lbs.
Broccoli	1 oz. to 2,000 plants, 4 oz.
Brussels Sprouts	1 oz. to 2,000 plants, 4 oz.
Broom Corn	8 to 12 lbs.
Buckwheat	50 to 60 lbs.
Cabbage	1 oz. to 2,000 plants, 8 oz.
Carrot	1 oz. to 125 ft. of drill, 3 lbs.
Cauliflower	1 oz. to 3,000 plants, 4 oz.
Celery	1 oz. to 5,000 plants, 4 oz.
Cheat	100 lbs.
Chicory	1 oz. to 100 ft. of drill, 4 lbs.
Clover, White, Alsike, and Bokhara	6 to 10 lbs.
Clover, Red, Mammoth Red, and Crimson	8 to 15 lbs.
Collards	1 oz. to 2,000 plants, 4 oz.
Corn, sweet	1 lb. to 200 hills, 15 lbs.
Corn, field	12 to 20 lbs.
Corn, fodder, in drills	75 lbs.
Corn, pop	8 to 10 lbs.
Cress	1 oz. to 150 ft. of drill, 12 lbs.
Cucumber	1 oz. to 100 hills, 2 to 3 lbs.
Egg Plant	1 oz. to 2,000 plants, 4 oz.
Endive	1 oz. to 400 ft. of drill, 4 lbs.
Emmer	100 lbs.
Flax, for seed, 30 lbs.; for fiber	50 lbs.
Grass, lawn, mixed, 1 lb. to 300 sq. ft.	145 lbs.
Grass, Kentucky Blue, Canadian Blue	20 lbs.
Grass, Timothy	12 to 20 lbs.
Grass, Red Top, in chaff	30 to 40 lbs.
Grass, Red Top, solid seed	10 to 12 lbs.
Grass, Rye Grass, English and Italian	40 to 50 lbs.
Grass, Orchard	40 to 45 lbs.
Grass, Meadow Fescue	25 to 30 lbs.

Quantity Per Acre

Hemp	40 to 50 lbs.
Horse Radish Roots	10,000 to 15,000
Kale	1 oz. to 200 ft. of drill, 1 lb.
Kohl Rabi	1 oz. to 150 ft. of drill, 2 lbs.
Kaffir Corn	6 to 10 lbs.
Leek	1 oz. to 300 ft. of drill, 4 lbs.
Lettuce	1 oz. to 400 ft. of drill, 3 lbs.
Melon, Musk	1 oz. to 60 hills, 2 to 3 lbs.
Melon, Water	1 oz. to 30 hills, 3 to 4 lbs.
Millet	20 to 50 lbs.
Nasturtium	1 oz. to 50 ft. of drill, 15 lbs.
Oats	75 to 100 lbs.
Okra	1 oz. to 100 ft. of drill, 8 lbs.
Onion	1 oz. to 300 ft. of drill, 4 to 5 lbs.
Onion, for sets	30 to 80 lbs.
Onion Sets	1 lb. to 40 ft. of drill, 400 lbs.
Parsley	1 oz. to 300 ft. of drill, 3 lbs.
Parsnip	1 oz. to 400 ft. of drill, 3 lbs.
Peas, garden	1 lb. to 50 ft. of drill, 200 lbs.
Peas, field	90 to 150 lbs.
Pepper	1 oz. to 1,500
Potatoes	400 to 600 lbs.
Pumpkin	1 oz. to 30 hills, 3 to 4 lbs.
Radish	1 oz. to 100 ft. of drill, 10 lbs.
Rape, Dwarf Essex	3 to 5 lbs.
Rutabaga	1 oz. to 150 ft. of drill, 2 to 3 lbs.
Rye	90 to 120 lbs.
Salsify	1 oz. to 50 ft. of drill, 8 lbs.
Sorgum, in hills	20 lbs.
Sorghum, in drills or broadcast	60 to 90 lbs.
Spinach	1 oz. to 200 ft. of drill, 8 lbs.
Squash, bush	1 oz. to 25 hills, 3 lbs.
Squash, vine	1 oz. to 12 hills, 2 lbs.
Sunflower	8 lbs.
Tobacco	1 oz. to 5,000 plants, 3 oz.
Tomato	1 oz. to 2,000 plants, 4 oz.
Turnip	1 oz. to 150 ft. of drill, 2 lbs.
Vetch, Common or Spring	60 to 90 lbs.
Vetch, Hairy or Winter	30 to 60 lbs.
Wheat	90 to 120 lbs.

Usual Distances for Planting

Beans, Bush, drills 2 to 3 feet apart.
Beans, Pole, 3 to 4 feet each way.
Beets, Early, drills 12 to 18 inches apart.
Beets, Late, drills 2 to 3 feet apart.
Blackberries, erect growing, 6 to 9 by 4 feet.
Blackberries, Mammoth and Himalaya, 8 by 24 feet.
Cabbage, Early, 16 by 30 inches.
Cabbage, Late, 24 by 30 inches.
Carrots, drills 1 to 2 feet apart.
Corn, Sweet, 3 to 3½ feet by 9 to 24 inches.
Corn, Field, 3½ to 4 feet each way.
Cucumber, 4 to 5 feet each way.
Currants, 5 by 3 feet.
Egg Plant, 3 by 3 feet.
Lettuce, drills 18 inches apart.
Melon, Musk, 5 to 6 feet each way.
Melon, Water, 7 to 8 feet each way.

Celery, rows 3 to 4 feet 6 inches in row.
Cauliflower, 2 by 2 to 2 by 3 feet.
Asparagus, 3 to 4 by 2 feet.
Gooseberries, 5 by 3 feet.
Grapes, 8 by 8 to 10 by 12 feet.
Onions, drills 14 to 20 inches apart.
Parsnips, drills 18 to 36 inches apart.
Peas, drills 2 to 3 feet apart.
Pepper, 15 to 18 inches by 2 to 2½ feet.
Potatoes, 12 to 18 inches by 2½ to 3 feet.
Pumpkin, 8 to 10 ft. each way.
Radish, drills 10 to 18 inches apart.
Raspberries, 6 to 8 by 3 feet.
Rhubarb, 2 to 4 feet by 4 feet.
Salsify, drills 18 to 24 inches apart.
Spinach, drills, 12 to 18 inches apart.
Squash, Bush, 3 to 4 feet by 4 feet.
Squash, Running, 12 feet each way.
Tomato, 4 feet by 4 to 5 feet.

LILLY'S