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1897

NOVEMBER, 1897.

RECEIVED
CENTRAL AGRICULTURAL
EXHIBITIONS

Catalogue

OF SEEDS

FOR THE GREENHOUSE
GARDEN AND FARM,
AND ESPECIALLY FOR
BEE-KEEPERS.

R.V. MURRAY. CLEV. O.



The
A. I. ROOT
COMPANY.

Medina, Ohio.

Established 1886.

Our Warrant on all the Seeds we Sell.

Now, friends, this is a somewhat difficult matter; but I feel free to say, at the outset, that we guarantee the contents of the packages to be what they are labeled, and seeds to be fresh, either our own raising, or purchased of some one having a good reputation, who makes seed growing a specialty; that is, we warrant them to this extent: If the seeds do not seem to be as represented, we will replace them free of charge; but we can under no circumstances undertake to guarantee a crop, nor can we be responsible for the failure of said crop. The matter is so complex and there are so many circumstances contributing to make success or failure, that I am obliged to put in this latter clause. If the seeds are not accepted with this understanding, we prefer they should be returned. We are practical market-gardeners, and are sowing the seeds we sell, nearly every day in the year. If there is any fault with them, we are usually one of the first to find it out.

PRICE 5 CTS. PER PAPER; 10 PAPERS, 40 CTS.; 100 PAPERS, \$3.50.

Seeds of new or rare vegetables and novelties we include at the uniform price of 5 cents per package; but, of course, we are obliged to put a smaller number of seeds into such packages. This will be noticed with the Bush Lima Beans and Snowball Cauliflower, etc. Now, these 5-cent papers are all sent by mail postpaid; but when you order seeds by THE OUNCE or POUND, allow postage thus: 9 cts. per pound; 5 cts. per half-pound; 1 cent per single oz. Peas and beans by the pint and quart must also have 8c per pint, or 15 cts. per quart, added for postage; on corn, add 12 cts. per quart for postage. Postage to Canada is NOW just double above rates. One-fourth ounce, pound, or peck will be sold at ounce, pound, or peck rates, unless otherwise specified.

ASPARAGUS.

Asparagus, Palmetto. Oz. 5c; lb. 40c.

We have given this new variety a trial beside the Colossal, and it is certainly a stronger and more robust plant.

Asparagus Roots. 2 year old. Palmetto, 10 for 10c; 75c per 100; \$6.00 per 1000. 2 year-old roots not available. 1 year roots, 10, 10c; 100, 50c; 1000, \$4. By mail, add 5c for 10; 25c for 100.

BUSH BEANS.

Kumerle's Bush Lima. Qt. 25c; ½ pk. 75c; pk. \$1.25.

Also called Dreer's bush lima. The richest and most delicious lima bean in the world, in my opinion.

Burpee's Bush Lima. Pt. 15c; qt. 25c; ½ pk. 75c; pk. \$1.25; bu., \$4.50.

A FULL-SIZED bush lima bean, equal in every respect to the pole limas.

Henderson's Bush Lima. Pt. 10c; qt. 18c; pk. \$1.00; bu. \$3.75.

Davis Wax Bean. Pt., 10c; qt., 18c; 4 qts., 65c; pk., \$1.25; bu., \$4.00.

Probably equal to any of the many rustless wax beans; but besides being white, it may be used as a shell bean for table use.

Best of All. Qt. 5c; peck, 40c.; bush., \$1.25.

This is a green podded string or wax bean, and is the one most largely grown in Florida for the Northern winter markets; it is probably the best of the green podded string beans.

White Kidney, Large. Pt. 8c; qt. 15c; pk. 65c; bu. \$2.21.

One of the best to use shelled, when green or ripe. We sell bushels of these at 10c a pint, shelled green. We market them in new pint strawberry-boxes.

York State Marrow. The standard field bean. Qt. 10c; peck 65c; bu. \$2.25.

Mills' Banner Bean. Qt. 15c; peck, 75c; bushel, \$2.50.

A new white bean; more productive and I think better for a table bean than York State Marrow.

Navy. Qt. 5c; pk. 35c; bu. \$1.25.

POLE BEANS.

Extra-Early Lima Beans. Price, ½ pt., 8c; qt 20c; peck \$1.00.

King of the Garden Lima. ½ pt. 8c; qt. 20c; peck, \$1.00.

These are fully as good as the common lima, and the pods are considerably larger, saving time in picking and shelling, as well as increasing the yield. We get 15 cents per pint for these, when green, shelled. See White Kidney bean above.

All of our beans will be furnished in 5-cent packages; but where they are to go by mail, postpaid, of course the above packages will have to be quite small. If wanted by mail, add 8c per pt. or 15c per qt. for postage.

BEETS.

Eclipse. Oz. 5c; lb. 25c; 5 lbs. \$1.00.

These have given us the best satisfaction of any thing we ever raised in the way of beets. They are a very quick grower of excellent quality, and the appearance of the bright smooth scarlet bulbs is fully equal to anything that has been pictured in the colored plates of our catalogues. In order to get a fancy price for them, start them in the greenhouse, and transplant when of the size of peas, or a little larger. They bear transplanting well, and are exceedingly hardy.

Lane's Imperial Sugar. Oz. 5c; lb. 15c; 5 lbs. 6c; 10 lbs. or more, 10c per lb.

The best variety for stock-feeding. It showed a larger per cent of sugar at the Experiment Station than any other an-

alyzed. It is so sweet, that, when small, they are nice to eat raw, and make an excellent table beet. Has yielded as high as 20 tons to the acre.

Long Red Mangel. Oz., 5c; lb., 15c; 5 lbs., 70c; 10 lbs., \$1.20, 20 lbs. or more, 10c per lb.

Yields enormously, and is the most profitable for stock, but not so sweet as Lane's improved

Golden Tankard Mangel. Oz., 5c; lb., 15c; 5 lbs., 70c; 10 lbs., \$1.20; 20 lbs. or over, 10c per lb.

Has yielded as high as 50 tons to the acre.

CABBAGE.

Select, Very Early Jersey Wakefield. Stock seed. Oz. 20c; lb. \$2.50.

Our cabbage seed is raised by H. A. March, Fidalgo Bay, near Puget Sound, Washington Territory. Thousands of sample packages have been sent out by us, and friend March's seeds ought to be pretty well known. The Early Jersey Wakefield, of the best selected strain, is fully as early as any other cabbage known, and greatly superior in quality. We have sold single heads at retail at 30c each, raised from plants started in the greenhouse in February.

Henderson's Early Summer. Oz. 10c; lb. \$1.00.

This comes next to the Jersey Wakefield; and although it is an early cabbage, under very favorable conditions it produces large heads of most excellent quality.

Fottler's Brunswick. Oz. 10c; lb. \$1.00.

This is one of the old staple varieties, and is planted as extensively as any one variety, from medium to late cabbage. Standing a long time without bursting.

Burpee's Sure-head. Oz. 10c; lb. \$1.10.

Our large swamp gardeners of Medina County keep calling for this cabbage each season so regularly that we have been obliged to put it in stock.

Excelsior Flat Dutch. Oz. 10c; lb. \$1.00.

Pronounced by Brill the BEST LATE CABBAGE. This has given us the finest heads of LARGE CABBAGE we have ever grown.

Perfection Drumhead Savoy. Oz. 10c; lb. \$1.25.

The Savoy cabbage is handsome in appearance, and richer and finer in quality, and STANDS FROST better, than any of the other varieties. In taste it nearly approaches the cauliflower.

Large Red Drumhead. Oz. 10c; lb. \$1.25.

This is a red cabbage for pickling. The bright red, by way of contrast, will make a load or lot of cabbages attract attention, and there is always more or less demand for red cabbage for pickles. Heads are very solid, and SPLENDID KEEPERS.

CARROTS.

Early French Forcing. Oz. 5c; lb. 40c.

These are small, but very early, and often bring a good price, because they are the first that make their appearance in the market. Bunched up like radishes, they are very taking in appearance.

Orange Danvers, Half-Long. Oz. 5c; lb. 40c.

Yields well, and is easy to dig. The best sort known.

CAULIFLOWER.

Henderson's Early Snowball. Raised by H. A. March. ½ oz. 25c; ¼ oz. 40c; oz. \$1.50.

Nice specimens of early cauliflower often bring extravagant prices, and it pays well to start them in the greenhouse, and use hand-glasses to forward them before the hot weather comes on.

CELERY.

Henderson's White Plume. Oz., 20.; lb., \$2.00.

We place this at the head of the list, and especially for early celery. We often have fine stalks on the market in July, which sell readily at 10c each. The seed is started in the greenhouse about the middle of January. On account of its self-bleaching qualities it is better fitted for early celery than any other.

Golden Self-Blanching Celery. Oz., 20c; lb., \$2.00.

It is different from all others we have seen, in being not only more dwarf—i. e., shorter, but it is also thicker; in fact, the plant, when fully matured, is so thick and stumpy as to create surprise. The variety is also excellent, and the labor of banking up is not more than that of the White Plum. It is rather an early celery, and should be used soon after approaching maturity.

New Rose. Oz. 20c; lb. \$1.75.

Our verdict is, that it is not only the hardiest and best grower among the whole celery family, but, when properly bleached by being put away for winter, it has given us the finest and most delicious and crisp celery we ever tasted. Although it is a red celery when growing, when fully bleached there is hardly a trace of the pink color, but it is a beautiful creamy white. We place it at the head of every thing else for a LATE WINTER celery.

Giant Paschal. Oz. 20c; lb. \$1.50.

A selection from the Golden Self-Blanching, and probably the latest and best large celery in the market. It has been for several years steadily gaining favor with almost all the large celery-growers.

Dwarf Golden Heart. Oz. 10c; lb. \$1.25.

One of the standard sorts for a later crop. The golden tint of the head stalks makes it a very handsome vegetable.

CORN (FOR TABLE USE).

Corn we sell at 5c per half-pint package; but at this price purchasers must pay the postage, which is 3c for each half-pint. If wanted in larger quantities the price (where no price is given) will be, pt., 7c; qt., 10c; pk., 50c; bu., \$1.75.

Kendel's Early Giant Sweet Corn. ½ pt. 5c; qt 15c; peck \$1.00 bush \$3.50.

We find this not only fully as early as Cory, but much less liable to smut, and the ears are larger.

Ford's Early Sweet.

Excellent in quality, fine good-sized ears, and exceedingly early.

Stowell's Evergreen.**Late Mammoth Sugar.**

This is excellent in quality, and gives ears of mammoth size, and is a wonderful yielder. Besides this, our strain is the SWEETEST sweet corn we have ever grown, and we have tested all the novelties that have been recommended. Our trade has been very large in this corn for 15 years.

Country Gentleman, or Improved Shoepeg.

Also called Zigzag.

This is the same thing as the No Plus Ultra, Banana, or Quaker Sweet. It is the most meaty and delicious corn that I ever tasted. It is unsurpassed for home use.

Sweet Corn for fodder. Pk. 30c; bu. \$1.00.**CORN SALAD.**

Oz. 5c; lb. 40c.

Sometimes called Lamb's Lettuce. It is to me a most delicious salad, something like lettuce, but having a peculiar rich flavor suggestive of cowslips and spring. It is very hardy, and will often stand out all winter. It does splendidly in greenhouses and cold-frames.

CRESS.**Extra Curled, or Pepper Grass.** Oz. 5c; lb. 30c.**Water Cress, true.** Oz. 3c; lb. \$3.50.

Watercress-plants, strong and nicely rooted. Post-paid, by mail, 10 for 15c; 100, 50c.

CUCUMBER.**Early Frame.** Oz. 5c; lb. 30c.

The earliest cucumber.

Improved Early White Spine, or Arlington. Oz. 5c; lb. 30c.

We have for some years, sold Rawson's, grown especially for greenhouse culture, but of late it seems little better than the above, while the price is about three times as much.

Green Prolific, or Boston Pickle. Oz. 5c; lb. 25c.

Wonderfully productive; medium size; dark green; tender. It yields fully twice as many pickles as any variety we ever tried.

LETTUCE.**Grand Rapids Lettuce.** Oz. 5c; pound, 50c; 5 lbs. \$2.00.

This is the best all-purpose lettuce in cultivation. It has been developed from the Black-seeded Simpson, by something like fifteen years of careful selection. It is superior and beautiful in appearance, a strong grower, very tender and crisp. At least fifty large greenhouses are now engaged in raising this kind of lettuce for market, in the neighborhood of Grand Rapids, Mich. For further particulars, see our book, "What to Do," etc.

Boston Market (or White-seeded Tennis-ball). Oz. 5c; lb., 50c.

The best variety of HEAD lettuce for greenhouse culture, as the heads are small, but compact and handsome.

Henderson's New York. Oz. 5c; lb. 50c.

We consider this the best head lettuce for outdoor culture known.

MELONS, MUSK.**Casaba, or Persian Muskmelon.** Oz. 5 cts.; lb. 30c.

A standard variety, of fair size. We have had specimens that I called the best melon I ever tasted.

Banana. Oz. 5c; lb. 40c.

I consider this one of the best muskmelons it has been my fortune to taste. They grow from 18 inches to 2 feet long; smooth skin; color, bright yellow. Always sell well on account of their unique appearance.

Extra Early Citron. Oz. 5c; lb. 40c.

Always profitable because of its extreme earliness.

Emerald Gem. Oz. 5c; lb. 40c.

This is a small one, say from 1½ to 2 lbs. The skin is of a deep emerald green, and the flesh is of a salmon color very delicious. My way is to eat it with a spoon, scraping the melon clear down to the rind. Of course, they want to be well ripened. I believe I should call it one of the most delicious of all muskmelons.

Miller's Cream, or Osage. Oz. 5c; lb. 40c.

We have been testing this for some years past. While the quality, perhaps, is not greatly better than some others, it certainly excels in yield. The meat is very thick, with a beautiful salmon color. The melons are dark green, and never turn yellow. When they are ripe, the stem will pull off of itself. We gather them for market, however when they separate easily from the vine. It is certainly an acquisition.

MELONS, WATER.**Phinney's Early.** Oz. 5c; lb. 30c.

The quality is very good, but the size is not very large.

Landreth's Boss. Oz. 5c; lb. 30c.

A melon that seems to combine more of the good qualities for a large late watermelon than any other.

Sweetheart. Oz. 5c; lb. 30c.

A new melon, and when well grown on suitable soil we should place it, for quality, ahead of all other water-melons.

ONION.

A leaflet on "Growing Onions to bunch up" will be mailed on application.

Yellow Globe Danvers. Oz. 5c; lb. 60c; 5 lbs. \$2.50.

A standard yellow variety. The best of all to grow from seed.

Large Red Wethersfield. The standard red onion. Oz. 5c; lb. 60c; 5 lbs., \$2.50.**Prize Taker.** Oz. 10c; lb. \$1.10.

This is the celebrated onion we see in the stores, called Spanish onion. Its color is nearly white. It is one of the finest-flavored onions grown, but is not a very good keeper. In this region it is better to start the seed under glass in January or February, then plant the small onions out in the field as soon as the ground can be worked.

White Victoria. Oz. 20c; lb. \$2.50.

We regard it as an acquisition for bunch onions, from the fact that the bulbs when grown in muck, are of a pearly whiteness, and need no peeling at all. If sown tolerably thick, you can pull them by the handfuls. Slip a rubber around them, swish them in a bucket of water, and they are ready for market. If sown early, we get 5 cts. for a ½-lb. bunch. These, besides being valuable for bunch onions, when given room and proper culture (see Prize Taker) grow to an immense size. I regard them as the handsomest early onion I have seen.

American (Extra Early) Pearl. Oz. 25c; ½-lb. \$1.50; lb. \$2.50.

In September, 1890, Johnson & Stokes were so very positive that sets of the above onion could be planted in the open field in September that I sent for half a peck of sets for trial. They came right up, and grew nicely, and to my great surprise, wintered without any injury I could discover. In the spring they started to grow at once, and made immense great white onions long before our onions started in the greenhouse had any chance to make an onion of marketable size. We commenced selling them when they were a little smaller than hen's eggs, and kept on selling until they were three or four inches across. Of course, we got large prices for them at such an unusual time of year. The sets may be put out at any time in September, and we think at any time in October, providing frosts hold off. This new way of getting extra early onions has been a success with us more or less each season since then, but they do not give like success in all localities.

Extra Early Red. Oz. 8c; ¼ lb., 25c; lb. 75c.**ONION-SETS.**

By mail 10 cents per quart extra.

Best Yellow. Qt. 15c; pk. 60c; bu. \$2.00.

Large size Yellow Danvers, one-half above prices. These are often used for pickles, but are also to be used for onion-sets; but the seed-stalks must be pulled off if they appear, if you wish them to make onions.

Extra Early American Pearl. Qt. 20c; pk. \$1.00 - bush., \$3.50. See American Pearl seed.**Prize Taker.** Same price as American Pearl.

These can be used in place of onion plants (started under glass), and they will stand very much more frost and exposure.

Winter, or Egyptian Onion Sets. Prices, 5c per qt., or 35c per peck; \$1.00 per bush.

This onion does not produce a bulb at all, or at least only a very inferior one. All it is raised for is its long succulent

stalks, with a sort of root, or small bulb, on the lower end. It has such an inveterate habit of growing that it grows any time when in the ground or out of it; and, in fact, almost the only place to keep it is in the ground. During August and September the sets may be gathered and sown. You can, with care, keep them over winter. The sets grow in the form of little onions, on the top of the stalk, like the old-fashioned onion-sets we used to see when we were children. We gather these sets as soon as they are ripe, say about the middle of August; then we sprinkle them in a drill, about as we would peas, say from three to five inches apart.

White Multiplier.

These are much like the potato onion, only white like the American Pearl and are ready for market about the same time. They do not send up any seed stalk but multiply like potatoes. They are almost as hardy as the Egyptian. The small sets will produce big onions but if you plant large or medium onions, they at once commence to break up into small onions, say from 12 to 20, so we should sort them out and plant each kind by itself.

Whittaker Onions. Large—qt., 10c; pk., 75c; bu., \$2.50; small (sets)—qt., 18c; pk., \$1.25; bu., \$4.00.

These have been so fully described during the past year we will only add that they are probably an improved and exceedingly hardy variety of potato onions. They can be planted at any time in the spring or fall. They multiply exactly like the White Multiplier. Price of either the Whittaker or White Multiplier, large onions, just right to plant out to produce small ones; or small sizes (called sets) of either of the above, as above quoted.

PARSNIP.

Improved Guernsey. Oz. 5c; lb. 25c; 10 lbs., \$2.00. Fine grained, fine flavored, smooth. The best parsnip we have found yet.

PARSLEY.

Fine Curled or Double. Oz. 5c; lb. 40c.

PEAS.

Alaska. ½ pt., 5c; peck, 75c; bush., \$2.50.

This pea is not only the earliest of any thing we have ever tried, but, strange to tell, it is also of a delicious quality, very productive, and an excellent pea in every respect, except that the pods look ready to pick before the peas inside are large enough to amount to any thing. If you pick them when they look plump and full you will disappoint your customers, and have trouble. Get careful pickers; tell them not to pick a pod until they know by squeezing it that there are good-sized peas inside, and you will then call it, as we do, ahead in quality of any other EARLY pea in the world.

American Wonder. Qt. 15c; pk. \$1.00; bu. 3.75.

This is a cross between the Champion and the Little Gem. The vine grows from 6 to 8 inches high. It is the first to ripen among the green wrinkled sorts. On account of its dwarf habits it can be grown very easily under glass.

Premium Gem. ½ pt. 5c; peck, 90c; bu., \$3.25.

Much like Am. Wonder, but taller and more productive.

Stratagem ½ pt. 8c; qt. 20c; pk. \$1.25; bu. \$3.90.

This has made its way rapidly in public favor. It is not only of rare excellence in quality, but the pods and peas are so large and fine looking they call attention at once from any thing else in the market. It has given us excellent satisfaction.

Champion of England. Pint, 10c; pk. 75c; bushel, \$2.50.

So well known as to need no recommend here.

Peas by mail will be at same rate as beans for postage.

PEPPERS.

Sweet Spanish. ¼ oz. 8c; oz. 20c.

This is not hot at all. Is used largely for pickles, to stuff with cabbage, mustard seed, etc.

Bullnose. ¼ oz. 5c; oz. 12c.

Very large, mild, but considerably hotter than the Spanish.

Cayenne. ¼ oz. 8c; oz. 15c.

Very hot. Fruit about 2 inches long.

PUMPKIN.

Early Sugar. Oz. 5c; lb. 35c.

They are much earlier than the ordinary pumpkin, sweeter for pies, and so small in size that we sell them all along in the fall at the rate of two for a nickel. In many places people will pay more for early pumpkins for pies than they will for any kind of squashes.

Field Pumpkin. Oz. 5c; lb. 15c.

RHUBARB.

Myatt's Victoria. Oz., 5c; lb., 75c.

Roots, 10c each; 50c for 10; \$3.50 per 100. Small roots postpaid by mail at above prices.

RADISHES.

Early Scarlet Globe. Pkt. 5c; oz. 5c; lb. 40c.

This is the radish that Vick gave such a beautiful chromo in his catalogue for 1888; and for forcing in the greenhouse, it is ahead of any other in the way of forcing radishes. They begin to form a bulb almost as soon as the second leaves come out. They are very hardy, and of exceedingly rapid growth.

Wood's Early Frame. Oz. 5c; lb. 35c.

The very best long radish for raising under glass, or for extra early.

Beckert's Chartier. Oz. 5c.; lb. 30c.

Of rapid growth and good size, both at the bottom and top. In favorable soil it will grow to a large size, and still be excellent in quality. They are remarkably certain to make a good bulb, and stand a long while without getting corky.

Chinese Rose Winter. Oz. 5c; lb. 35c.

These not only stand cold weather until toward Christmas, but we consider them really a most delicious radish, and the most free from being corky, of any radish known. They are not as strong as radishes ordinarily are, but are of a sweet turnip flavor. Usually sown at the time we sow turnips.

SALSIFY, OR OYSTER PLANT.

New Mammoth. From Sandwich Islands. Oz. 8c; lb. 75c.

We have grown this side by side with the common salsify, and we find the roots larger, better shaped, and equally good in other respects; they are, therefore, without question an improvement. Finely grown specimens are almost as large and smooth as parsnips.

SPINACH.

Bloomsdale Extra Curled. Oz. 5c; lb. 15c. 5 lbs. 60c; 10 lbs. \$1.00

It combines as many of the good qualities as any other.

SQUASH.

Giant Summer Crookneck. Oz. 5c; lb. 30c.

This squash is as early as the ordinary crooknecks, and in every way equal; but are of such size that one squash will make a dinner even when soft and tender; and one good thrifty plant will almost supply a family.

Hubbard. Oz. 5c; lb. 30c; 5 lbs. \$1.25; 10 lbs. \$2.25. There is no better winter squash than the Hubbard.

TOMATO.

Golden Queen. Pkt., 5c; oz., 15c; lb., \$2.00.

This is no special novelty, that I know of, over other tomatoes, except its beautiful golden yellow color; but at the same time the tomato is good-sized, and remarkably smooth and regular. Not so tart as the red varieties.

Ignotum Tomato. ½ oz. 8c; oz. 15c; lb. \$1.50.

During the year 1889 we sent out about 3000 sample packages of the Ignotum tomato; and the general testimony of those who have grown it corroborates the decision of the Michigan Agricultural College, that it is, all things considered, the best, and they gave it a test side by side with over 100 different varieties. There are, however, several kinds (among them Livingston's Beauty) that are rather handsomer in shape, but they are behind in size and earliness. In solidity the Ignotum is behind none; and for slicing up for the table we have never found any thing better.

Livingston's Beauty. Oz. 20c; lb. \$2.00.

This is a production of the same Livingston who brought out the Acme, Trophy, Favorite, and Perfection; but he pronounces this superior to them all. They are better shaped and smoother than the Ignotum, but not so large.

Dwarf Champion. Oz. 20c; lb. \$2.00.

We have tried to get along without this tomato; but its earliness, uniform size, solid, thick meat, round, smooth shape, and, more than all, dwarf, compact habit of growth, permitting it to be planted as close as 2 by 3 feet apart, commends it so highly that we have concluded to offer it again, though it makes our list larger than we like.

Livingston's New Stone Tomato. Oz. 20c; lb. \$2.00. A very fine large tomato for main crop.

Fordhook Early. The best early good sized tomato we have tested. Oz. 35c; lb. \$4.50.

Earliest-in-the-world Tomato. ¼ oz., 15c; ½ oz., 25c; 1 oz., 40c; oz., 75c.

In a test of nearly all kinds offered this was nearly a week ahead, and they gave us as nice, handsome, smooth tomatoes as any "in the world." They are not very large; but as it is quite fashionable now to eat tomatoes whole, these will be just the thing, for they yield wonderfully. Where they are given plenty of room the plants will often blossom and set green fruit in the seed-bed. This will do no harm, however, for we transplant them to the field with the blossoms and little tomatoes on; and these little tomatoes are the first to ripen. The seed is of our own growing. We would place the Fordhook next, as it is equally handsome, and of good size, although it is about a week later. This seed is also of our own raising, from selected fruit. Oz., 35c.

Buckeye State. Oz., 20c; ¼ lb., 60c; lb., \$2.25.

Trophy Tomato. Oz. 10c; lb. 75c.

Improved strain from D. Cummins, of the Lakeshore Canning Factory. He has been for 25 years making selection from the Trophy, on purpose to grow plants for his canning factory, and he prefers this strain to any of the newer or later varieties.

Pear-Shaped Tomatoes. Oz. 20c; lb. \$2.50.

These are handsome for pickles and preserves. They are immense bearers, and of good quality. Small size but exactly the shape of a pear.

TURNIP.

Extra-Early Turnips.

We have tested some of these which are advertised in the different seed catalogues; and while we find them some earlier than the staple turnips, they are, so far as we have tested them, inferior in quality, very strong in taste, and sometimes bitter.

Yellow Aberdeen. Oz. 5c; lb. 30c.

We consider this one the best table turnip grown. When cooked it is so yellow that it will sometimes be mistaken for squash.

White Egg. Oz. 5c; lb. 30c.

Very showy and handsome, as well as quite early, and fine quality.

Breadstone. Oz 5c; lb. 30c.

This turnip is so much superior to any of the Swede turnips for table use, that those who ate them at our lunch-room came to me not only for turnips, but for seed to sow next year. The flesh is white, and the quality exceedingly rich and delicious.

Purple-top White-globe. Oz. 5c; lb. 30c; 5 lbs. \$1.25.

This turnip has given us the best results of any thing we tried; the quality seems to be unusually fine for table use, especially when they are about as large as fair-sized apples. They grow nearly as quick as any other turnip known, and are very handsome. When washed they are almost as white as an egg, with a beautiful purple around the top. They are smooth and round.

SEED POTATOES.

For many years we have made it part of our business to introduce new and desirable varieties of potatoes. Since the publication of our book on potato culture, by T. B. Terry we have been in the habit of purchasing either a part or the whole of Mr. Terry's crop for seed; and we have in this way introduced to the world the potatoes that Mr. Terry himself has found most worthy of adoption. It should be remembered, however, that friend Terry never grows the late varieties. For his rotation, as described in his book, he raises only such as can be removed in time for sowing wheat.

NAME	1 lb. by mail.	3 lbs. by mail.	½ peck.	Peck.	½ bushel.	Bushel.	Barrel—11 pk.
White Bliss Triumph	18	40	25	40	75	1 25	3 00
Bovee	30	75	41	75	1 25	2 00	5 00
E Thoro' bred, Maule's	18	40	25	40	75	1 25	3 00
Early Ohio	18	40	25	40	75	1 25	3 00
Early Norther	18	40	25	40	75	1 25	3 00
Burpee's Extra Early	18	40	25	40	75	1 25	3 00
Freeman	18	40	25	40	75	1 25	3 00
New Queen	18	40	25	40	75	1 25	3 00
Monroe Seedling	15	35	20	35	60	1 00	2 50
Rural New-Yorker No. 2.	15	35	20	35	60	1 00	2 50
Sir William	15	35	20	35	60	1 00	2 50
Carman No. 1	18	40	25	40	75	1 25	3 00
Carman No. 3	18	40	25	40	75	1 25	3 00
Koshkonong	15	35	20	35	60	1 00	2 50
Manum's Enormous	30	75	30	50	81	1 50	3 50
New Craig	18	40	25	40	75	1 25	3 00

We can furnish seconds of the Thoroughbred and Freeman, at one-half the above prices, until they are sold out.

DESCRIPTION OF THE ABOVE-MENTIONED VARIETIES.

White Bliss Triumph. This is a sport of the well-known Red Triumph. It is exactly like it, so far as I know, with the exception that it is a white potato, or at least nearly white. There is occasionally a pink spot or streak in the potato. In 1896 we pronounced it as the earliest potato before the American people; that is, the earliest good yielder. Not only is it extra early, but in 1896 we secured a crop of between 200 and 300 bushels per acre, and almost every potato was of good size and of nice shape, and free from scab.

Bovee. At this date this promises to be the most successful rival to White Bliss; and our Ohio Experiment Station, if I am correct places it ahead in productiveness. In fact, for an extra early the yield has been far ahead of any other.

Early Ohio. Too well known to need describing. For many years it has been regarded in many localities as the earliest potato, and at the same time it is one of the very best in regard to quality. In many places the yield, however, has been poor of late years.

Thoroughbred. We scarcely need describe this as it has been written up so much and commended during the past year. On our own grounds, in favor spots, in 1896 the yield was as high as 50 bushels per acre. It is very early, and of fine quality—probably next to the Freeman in quality.

Freeman. This potato steadily holds its place at the very top of the list so far as quality is concerned. In my opinion there has never been a better potato, either in the past or present; and with the right kind of culture, and on ground suitable to it, it is a rather extra yielder. Terry, year after year, gets large crops of good-sized beautiful potatoes. It is peculiarly adapted to planting on the one eye system taught by Terry, who grew our present crop.

New Queen. This comes very close to the Freeman as regards quality, and in some tests it has been almost as early as some of the extra earlies. In regard to productiveness, permit me to say that it gave us during the year 1896, 375 bushels per acre right through a pretty good-sized field. On our own grounds it has no superior so far as productiveness is concerned, unless it is the Thoroughbred.

Monroe Seedling. For several years before Mr. Terry got hold of the Freeman this was the potato of his choice. It is early enough to be off the ground in time for wheat; good yielder, and of good quality. Our seed this year was grown by Wilbur Fenn, of Tallmadge, O. The potato is one of the very best to keep away into the middle of the summer without sprouting or wilting.

Rural New-Yorker No. 2. Thousands of farmers have succeeded in getting large crops of nice large smooth potatoes with this one when they have failed with almost all others. It is one of the staple medium late potatoes of the present time.

New Craig. This has given wonderful results on our own grounds, and for three years it has distanced all others in being proof against bugs, rot, or blight. It has also given us wonderful yields; but I am sorry to say it has not succeeded in all localities as it has with us. The Craig potato needs the whole season. In fact, it seldom dies down until killed by the frost, even if planted in April; but it grows the whole season, however, and the potatoes are very apt to be too large for table use. Below we show a picture of 40 potatoes that were



picked off from the tops of the boxes, without taking any special pains. To get the largest yield, this potato should be planted early; but during 1896 season we had a crop of about 200 bushels per acre of Craigs that were planted on ground from which we took a crop of oats; in fact, they were not planted until about the middle of July.

Sir William. This potato has given next to the largest yield of any thing tested at our Ohio Experiment Station in 1896. It is also the one recommended above all others by W. I. Chamberlain, of the *Ohio Farmer*; and notwithstanding the extra yield it gives, the quality is very fine, and the potatoes cook dry and floury, even when they are still half grown.

Carman No. 1. A potato much like the Rural New Yorker, but better in quality for table use; large yielder.

Carman No. 3. A good deal like the No. 1, but a

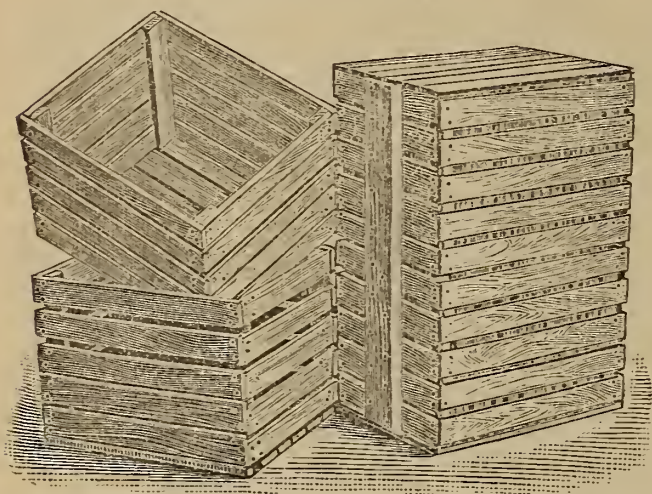
still smoother and handsomer potato, and one that has, ever since its introduction, sold at extremely high prices.

Koshkonong. This gave the largest yield of any potato tested at the Ohio Experiment Station in 1895; a very handsome potato, but not equal to some of the others in quality.

Manum's Enormous. Enormously productive in fact, in 1895 the originator secured 603 bushels per acre. The quality is fair, and, besides this, it seems to stand almost at the very head of the list in its quality of keeping sound and firm away on into the middle of the summer.

Seed sweet potatoes furnished in their season at market prices. Notice of same duly given in *Gleanings*.

Bushel Boxes.



The above cut shows our popular *all-slatted bushel box*. We have two other styles; one has slatted bottom and sides with solid ends in three pieces called the *slatted bushel box*. The other has solid ends and close bottom and sides, and is bound with galvanized iron and called the *galvanized bound bushel box*. These boxes were devised by T. B. Terry for handling potatoes, for which purpose nothing could be handier. The potatoes are picked up into the boxes in the field and left in them till sold. Other crops, such as cucumbers, tomatoes, and apples are being handled in these same boxes. They are of such a size that two go crosswise in an ordinary

wagon-box. Outside measure is $14\frac{1}{2} \times 16\frac{1}{2} \times 12\frac{1}{2}$ deep, and they hold a bushel of potatoes level full so they can be piled one upon another. The above cut shows two *all-slatted* boxes nailed up, and a bundle of 15 alongside; 13 of the 15 are in the flat, packed inside the other two, and nails of the proper kinds are included. The *slatted* and *galvanized bound* boxes are put up in the same way, except there are only 12 in a package instead of 15. Each package weighs about 85 to 90 lbs.

PRICE LIST.

All-slatted bushel box, per crate of 15..... \$1 50
Slatted bushel box, per crate of 12..... 1 50
Galvanized bound bushel box, per crate of 12.... 2 10

In lots of ten crates, 5 per cent discount will be deducted. Price each, nailed, 15, 18, and 22 cents, respectively. A 20-page pamphlet called *Handling Farm Produce*, telling all about these boxes, mailed free on application.

Bushel Baskets.

During the past year we contracted for about *one hundred dozen* of two styles bushel baskets, to be made during the manufacturer's dull season, at a special low price, which we intend to share with our customers by offering a

Hand-made Oak-stave Basket,

made with a double row best oak staves, bound together with two strong hoops, good strong bottom and handles. Do not confuse these with the cheap fruit-baskets, made to be used but once, but expect a basket that will give years of service.

We can furnish these at the extremely low price of 3 for 50c; 6 for 90c; 12 for \$1.75. At these low prices we can not break packages.

Our "Briggs" Basket.

Nothing better made. This basket is made with a single row of staves put closely together and bound with strong wooden hoop at top and galvanized iron band around center; good strong handle, smooth finish. This basket will hold wheat as well as corn.

Prices are: 3 for 75c; 6 for \$1.50; 12 for \$2.75. We can also furnish a crate of 3 each of the above baskets for \$1.25.

Common Market-baskets.

We have two sizes of these, which we can furnish in case lots (no less sold) at the following prices. Each basket has two drop handles.

Half-bushel size.—Bundle of 12, 40c.

Peck size.—Bundle of 12, 35c.

VEGETABLE PLANTS.

These are one of our great specialties, and we are prepared to furnish cabbage, onion, and lettuce plants from the first of March till the first of August; celery-plants from the first of March till the first of September; tomato, sweet potato, and pepper plants from the first of April till the first of August.

ASPARAGUS ROOTS.

HENDERSON'S PALMETTO roots, 2 yrs. old, 10c for 10; 75c per 100, or \$6.00 per 1000. One-year old roots, 50c per 100, or \$4.00 per 1000.

HORSERADISH ROOTS.

Price 5c for 10; 25, 10c; 100, 40c; 1000, \$2.00. By mail, 25c per 100 extra.

Horseradish is best propagated from pieces of root 2 to 4 inches long; these should be put in the ground at an angle of about 45 degrees, and deep enough so the tip of the cutting will be about two inches below the surface of the ground. They should have about 1 foot of space each way, and it is a good plan to put them in some corner where they will not have to be disturbed, as, when once started, they will take care of themselves, and occupy all the territory you will allow them. Can be planted any time, and do not object to a very wet place.

CABBAGE-PLANTS.

We keep in stock during the months of March, April, May, June, and July, varieties as below:

SELECT VERY EARLY JERSEY WAKEFIELD, HENDERSON'S EARLY SUMMER, 5c per 10; 100, 40c; 1000, \$3.00; 10,000, \$25.00. During May, June, and July, EXCELSIOR FLAT DUTCH, FOTLER'S BRUNSWICK, prices same as above. PERFECTION DRUMHEAD SAVOY CABBAGE, and LARGE RED DRUMHEAD, 8c per 10; 60c per 100, or \$5.00 per 1000.

COLD-FRAME CABBAGE-PLANTS.

When we have these they will be double the price of the plants raised in the greenhouse. During the present season we have only one kind of cold-frame cabbage-plants; viz., extra selected JERSEY WAKEFIELD.

CAULIFLOWER.

We have confined our attention to the one kind—HENDERSON'S EARLY SNOWBALL. Price of plants, 10c for 10; 75c per 100, \$6.00 per 1000. These will be ready in March, April, May, and June.

ONION PLANTS.

I, so far as I know, originated the idea of sending onion-plants by mail and express, and during the past three seasons have sold nearly a *million* of plants. We send them out March, April, and May, and the prices are 15c per 100; \$1.00 per 1000, or \$7.50 for 10,000. Four kinds are grown, AM PEARL, YELLOW DANVERS, WHITE VICTORIA, and PRIZETAKER.

LETTUCE-PLANTS.

We can furnish BOSTON MARKET, GRAND RAPIDS, and HENDERSON'S NEW YORK. Prices, 5 cts. per 10; 40 cts. per 100; \$2.50 per 1000.

TOMATO-PLANTS.

These will be ready from April first till August first. We have the following varieties:

LIVINGSTON'S BEAUTY, IGNOTUM, DWARF CHAMPION and EARLIEST IN THE WORLD. The above will be 10c for 10; 75c per 100; \$6.00 per 1000; or \$50.00 per 10,000.

PEAR-SHAPED TOMATOES, for pickles and preserves, 8c for 10, or 75c per 100.

PEPPER-PLANTS.

We expect to keep in stock BULLNOSE, CAYENNE, and SPANISH PEPPER. The price will be 15c for 10; \$1.25 per 100, or \$12.00 per 1000.

CELERY-PLANTS.

We keep in stock HENDERSON'S WHITE PLUME, GOLDEN DWARF, GOLDEN SELF-BLANCHING, GIANT PASCHAL, and NEW ROSE. Prices, 5c per 10; 40c per 100; \$3.00 per 1000; or \$25.00 per 10,000.

Extra-strong plants, double above prices. These are secured by an extra transplanting, with additional room, and, as a rule, have large bushy roots. If these are to be shipped by express, the expressage will be extra, on account of the great weight of the plants.

We can send plants by mail if enough is added to cover postage and packing, which will be 5c for 10, or 25c per 100. Postage on onion plants, 5c per 100, or 40c per 1000. To Canada, double the above.

Our cabbage, cauliflower, tomato, and celery plants are transplanted once, then we wait for them to make good strong roots before sending them out. We know this insures your getting much better plants than is possible to produce in a seed-bed without transplanting. All of the above, except sweet-potato and onion plants, will be 1/2 price if taken from seed-bed.

SWEET POTATO-PLANTS.

Same price as celery-plants; ready May 1st. Plants of the two varieties of vineless Sweet Potato, viz., Gen. Grant and Bunch Yam, will be one-half more.

Strawberry Plants.

With the multitude of new and exceedingly good berries before us at the present date, it is a very hard matter to make a selection of only a few kinds; but, as with garden seeds, I can not consent to cumber myself nor my patrons with a long list of varieties. I am testing most of the new kinds, and I may, perhaps change my list somewhat from time to time, but for the present I have decided to offer only JESSIE, PARKER EARLE, SHARPLESS, WARFIELD, BUBACH, EDGAR QUEEN, and HAVERLAND. The four last are pistillate, so you need at least one-fourth of the number of the others to put among them—or, say, every third row Jessie, Parker Earle, or Sharpless. We prefer the Jessie for a fertilizer, because it has such a long season and such an abundance of blossoms. I would recommend Earliest to fertilize the very early blossoms, and Parker Earle for the very late blossoms. Earliest is the earliest berry we are acquainted with at present. The quality is very good, but it does not produce as many berries as some of those that are a little later. The Edgar Queen produces enormous quantities of excellent berries, but the shape is very irregular. The Bubach furnishes large berries in great abundance; but during a wet season they are liable to rot, as they are pretty soft. The Parker Earle is a large, handsome, very late berry. The Haverland is wonderfully productive, stands frost remarkably, but is not the best in quality. The Warfield is of a fine dark color, good shape, rather tart, but stands frost remarkably well.

The above description is as near as I can come to advising what is the best berry to plant. There isn't any best. Some are best on certain points, and some are best on other points. For instance, the Jessie gives excellent satisfaction in our locality; but in many places it does not seem to answer at all.

Our prices are 15 cts. for 10 plants; 75 cts. per 100, or \$6.00 per 1000. If wanted by mail, add 5 cts. for 10, or 25 cts. per 100, for postage. To Canada, double the foregoing. We can furnish strawberries from March till November, inclusive.

New Varieties of Strawberries. There are just now quite a number of very promising varieties under test. Among them we have selected those in the table below. We describe them briefly as follows:

Darling and Earliest are both extra early. They look very much alike. Both are seedlings of the well-known Michel's Early. Earliest is so exceedingly early that the blossoms will have to be covered or they will be very sure to be killed by frost during average seasons. I think either of them will produce a larger amount of fruit than Michel's Early. The quality, shape, and color are all that could be desired. The berries are rather tart.

Carrie is a seedling of the Haverland. It comes from the originator of this popular variety. It is almost exactly like it except that the berries are very much larger. The people at our Experiment Station agree with me in thinking that it is going to prove very popular.

Nick Ohmer is the large-t-sized berry of good shape I have ever seen. In fact, we grew some specimens not only as large as a fair-sized lemon, but also t as smooth and round. Margaret is a good companion to the Nick Ohmer.

The Marshall is now pretty well known. It is a large sized berry of perfect shape, excellent flavor, and quite an early berry.

Brandywine, while having many other good qualities, is peculiar in being so hard and firm that the berries may be tubed about almost like potatoes. It has certainly come to stay.

The Wm Belt is earlier than the Brandywine, exceedingly large, but not of as good shape as the Nick Ohmer and Margaret but it is very prolific. Matthew Crawford has recently pronounced it the best strawberry he knows of, all things considered, and I do not know but I should pretty nearly agree with him. A great many of the berries are of awkward shape, like our old friend the Sharpless; but, like the Sharpless, they are also of excellent flavor, and so sweet they can be eaten out of the hand without sugar. They are literally clumps of pudding—good sized chunks—and most excellent pudding too.

Now, I confess I dislike to make my list of strawberries so long; but I really can not give up the old Sharpless—the berry that was our pet an' choice for years but which was finally discarded for newer ones. For just one reason I would give the Sharpless a place among all the newer berries. It will bear more great luscious berries in an o' d bed that has been entirely neglected than any other plant I know of; and when thus neglected it is a very late berry coming in after others are gone, and sometimes bringing bigger prices than any of the others.

SOMETHING NEW IN THE WAY OF POTTED STRAWBERRY-PLANTS AND TRANSPLANTED STRAWBERRY PLANTS.

With the assistance of the new potting material called "jadoo fiber," I have, during the season of 1897 made what I think quite an important discovery in the way of transplanting strawberries. It is, briefly, this: The plants are potted in the usual way, using the jadoo fiber instead of earth. The fiber is so light it may be sent safely by mail without increasing to a serious extent the amount of postage needed; and after the roots have filled the pots they hold the jadoo fiber very securely from rattling loose. Still further, after the pots are filled with roots we transplant them in a bed watered by sub-irrigation, and they are not sent out until little roots have commenced to start out all round. These TRANSPLANTED POTTED STRAWBERRY PLANTS are very much superior, not only to ordinary layer plants but to ordinary potted plants; for the jadoo fiber gives them nutriment and fertility so they will have quite a "send-off" even when transplanted into rather poor soil. We are making arrangements to furnish these trans-

planted potted plants in the spring as well as in the fall. Of course, it is only new and exotic varieties, as a rule, that we send out in this way. Prices until further notice will be as in the table below:

PRICES OF TRANSPLANTED POTTED STRAWBERRY-PLANTS.

NAME.	Each.	10	100
Darling.....	.25	\$2 50	
Carrie.....	.20	1.75	
Earliest.....	.20	1.75	
Nick Ohmer.....	.25	2 00	
Margaret.....	.10	1 00	
Marshall.....	.6	.40	
Brandywine.....	.6	.40	\$3 50
Wm. Belt.....	.6	.40	3 50

Any of these will be 1 cent per plant less for layer plants.

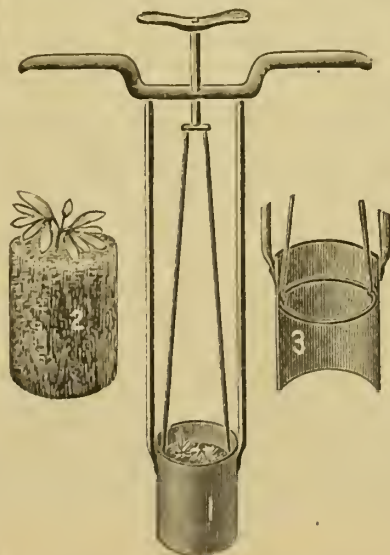
All the varieties above, except Carrie are perfect. At the above prices we pay postage or express charges. Where there is an express office near your home, we prefer to send 50 or more by express.

A "DARLING" STRAWBERRY PLANT FOR EVERY DOLLAR SENT US FOR GLEANINGS.

As we think the Darling is sure to please, and as we want all of you to see one of our "new process" potted strawberry-plants with the jadoo fiber we have decided to send one plant free, postpaid by mail, to every one who sends us a dollar for GLEANINGS IN BEE CULTURE. Here is what the originator, Mr. M. T. Thompson, of Rio Vista, Va., says about the Darling:

"If it ever was a berry that would produce 1000 bushels per acre, it is this one. It is a seedling of Michel's Early and has fruited for us two years. Price of plants \$3.00 per dozen."

A NEW TRANSPLANTING MACHINE.



The cut will make the machine plain, almost without any particular explanation. You hold the machine in both hands, and with an auger-like motion back and forth you set the steel tube, No. 1, over the plant. It is pressed down till it will bring up the plant, roots, and all, in a lump of dirt like No. 2. It is not advisable to push it any further down than is necessary to get all the roots. In fact, if the taproot is broken off, with most plants they will do just as well.

After the plant is out of the ground in its ball of earth, you place your two thumbs on the lever at the top of the machine, and push down, releasing the ball of dirt. With strawberries you can load these balls into a wheelbarrow, or with appropriate trays you

can load them into a wagon. Fit your ground nicely, as described in our book on strawberry culture. Mark it out according to your notion, then with the transplanting-machine

make holes to drop your "potted plants" into, for they really are potted plants, to all intents and purposes.

Permit me to say that I have used very faithfully all the strawberry planting implements made on this plan, and I would put this machine far ahead of any of them in point of speed of working, and for effectiveness. Where you are going to put out a considerable area, say a quarter of an acre or more, especially if two hands are at work, two machines are very handy. Price of the machine, \$1.50; two machines, \$2.75.

JADOO FIBER.

Should any of the friends wish to test the virtues of this jadoo fiber in larger quantities than they can find on the strawberry plants mentioned above we can furnish it at the following prices: 5 lbs., 30 cts.; 10 lbs., 50 cts.; 5-lb. box \$1.00; sack of from 10 to 13 lbs., 3 cts. per lb. It may be shipped either from here or from Philadelphia. The material is so light that a single pound goes a good way.

Honey Plants.

I have for years had dreams of a honey farm, with acres of flowers of different colors, blooming at different seasons, and keeping the bees away from the stores and groceries when we have a dry spell in the fall. The dream has been partially realized with the Simpson honey-plant, Mollie O. Large's spider plant, and the seven-top turnip, but I am pretty well satisfied it will not pay to cultivate these for honey alone. Mignonette, catnip, moth-wort, borage, melilot, and some others, I have tested, but I am quite sure that none of them have ever paid, just for the honey.

We first give a list of the plants that not only yield honey, but are profitable crops for their other products. If the bee-keeper can not raise these himself, he can often induce farmers round about him to do the same by furnishing the seed free, or (where it is expensive) part of the price of the seed. As an illustration: We have for years been in the habit of furnishing buckwheat seed free of charge to any one who will sow it within a mile and a half of our apiary. Alsike, white Dutch clover, and Mammoth (or Peavine) and crimson clover, we furnish at half the usual price. Now, then, friends which is the most important honey-bearing plant, generally speaking, in the world? I am inclined to think that basswood (or linden) bears the largest quantity of honey, although it is not generally considered quite equal to clover in flavor; for in the honey-markets it usually sells for one cent per pound less than clover. We, however, put basswood first and clover second.

Basswood-trees.	Per 10	Per 100
One foot and under, each, - - .05	.30	\$ 2 00
The above by mail, " - - .08	.35	2 25
One to five feet, " - - .10	.75	5 00
Five to ten feet, " - - .15	1.25	10 00
Ten to fifteen feet, " - - .25	2 00	15 00

These will be taken directly from our nursery, and if planted any time after the leaves have fallen, until the ground freezes, not one in one hundred should fail to grow. They can also be sent during the months of March, April, and May; and spring planting is preferable. For a description of the basswood, with engraving, see A B C. Basswoods may be planted along the roadsides so as to answer for shade-trees and at the same time furnish honey. The bee-keeper can also usually arrange so as to get them planted for shade along the streets of towns and cities. We can furnish the basswood-seeds if desired; but as they require special treatment I think our friends will be much better satisfied to buy little trees.

SEEDS OF HONEY PLANTS.

The prices given below are only for prompt orders, for the market fluctuates so, on clover seeds especially, that we can not promise these prices to continue.

Basswood-seed. Oz. 5c; lb. 50c; by mail, 60c.

Alsike Clover. One ounce, by mail, 5 cts.; 1 lb., by mail, postpaid, 25 cts.; by express or freight, 1 lb., 15 cts.; one peck, \$1.60; ½ bushel, \$3.00; bushel, \$5.50.

This furnishes not only the best honey of any plant in the world, letting the majority judge, but the quality of the plant for feed for cattle, whether hay or pasture, is probably better for milk-producing than any other forage-plant. It can be sown almost any time, but perhaps gives best results for seed, when sown in March or April. About 6 to 8 lbs. are required per acre, and it does not blossom much until the second year. Its treatment and cultivation are much the same as for common red clover, but the seed is saved from the first crop. We know our seed to be fresh, and free from dangerous seeds.

Medium Clover, same as alsike.

White Dutch Clover. Bushel \$10.00; ½ bu., 5.50; pk \$2.75; 1 lb., 20c; lb by mail, 30c.

This differs but little from the ordinary white clover. It has an advantage over alsike, inasmuch as it will scatter itself without any cultivation, and it grows along the roadsides, pastures, and all waste places.

Peavine, or Mammoth Red Clover. Bushel, \$5.50; ½ bu., \$3.00; pk., \$1.60; per lb., 15c; by mail, 10c per lb. extra.

This yields honey late in the season after all other clovers, and, in fact after basswood; and in some localities it rarely fails to give more or less of a crop, especially where Italian bees are kept. In other localities there have been complaints made that the bees would not work on it.

Alfalfa, or Lucerne. Per bush., \$5.50; ½ bush., \$3.00; peck, \$1.50; pound, 15 cts. By mail, 10 cts. per lb. extra.

This is the great honey-plant of Arizona, Idaho, California, and other Western States and Territories. Where it is raised by irrigation in fields of a thousand acres or more, there is an almost continuous honey-flow, from spring until winter. In fact, it produces each season the most beautiful honey, not only by the ton but by the carload. In Sept. 1892, we received from W. K. Ball, Reno, Nevada, a carload of the finest comb honey made from alfalfa, ever put on this or any other market. Little patches have, at least partially, succeeded in the Eastern States. In dry seasons it will succeed, without a doubt; but much rain is detrimental. On our grounds it stands winter without injury and we have found the roots at a depth of several feet. We furnish purchasers a little circular in regard to its cultivation.

Crimson or Scarlet Clover. Two-bushel sack, \$5.50; per bushel, \$3.00; half-bushel, \$1.60; peck, 80 cts.; pound, 10 cts. If wanted by mail, add 10 cts. per lb. extra for postage and packing. We will send 3 lbs. by mail, postpaid, for 50 cts. From 8 to 15 lbs. of seed are needed per acre.

It is a little singular that this plant, after having been in this list of seeds of honey-plants for upward of ten years, without eliciting very much attention, has, within a couple of years past, not only come up into great prominence as a honey-plant, but it even bids fair to take the lead among the clovers of any in common use, simply from the fact that, when sown in the fall early enough to get well rooted, and yet not so early as to send up blossoms, it will stand average winters without injury, even as far north as Northern Ohio. At the present writing March 1 crimson clover is exciting more attention among farmers generally than almost any other plant that has ever been introduced. It is equal to any clover for hay, and comes in a little earlier in the spring than any other. It is as valuable as red clover to plow under, and yet it may be sown among growing corn at the last cultivating, and be ready to plow under in time to put another corn crop on the same ground the very next year. It is cheaper than manure, on most farms; for a heavy growth plowed under has been called equivalent to ten tons per acre of the best stable manure. It also promises to be a boon to bee-keepers.

Sweet Clover (*Melilotus alba*, or *Melilot*.) Also called *Bokhara*. Per lb. by mail, 18c; 10 lbs. or more, 6c per lb.; 100 lbs., 5c per lb.

Sweet clover hulls off, 3c per lb. additional. As there are a good many more seeds in a pound of this latter, it may be as cheap, even at this advance price.

This has some valuable traits, as standing frost and drouth, but some times the bees will hardly notice it. About four pounds of the hulled seed, or eight or ten lbs. with hulls on, are needed for an acre. It will grow on almost any barren hill-side but it is never a bad weed to exterminate. If it is mown down to prevent seeding, the roots will soon die out. Sow in spring or fall. In the vicinity of Salt Lake, Utah, sweet clover is the main honey-plant, and the quality of the honey is equal in my opinion to any honey in the world. The plant lives through the dry summers in Utah. See "leaflet" about sweet clover, mailed free on application.

Buckwheat, Japanese. Trial packet, 4 ounces, by mail, postpaid, 5c; 1 lb. by mail, postpaid, 15c; peck 20c; ½ bush., 35c; bush., \$6.75; 2 bush., \$1.10. These prices include bag to ship it in. Ten or more bushels, purchaser paying for bags, 50c.

We should place buckwheat at the head of the list were it not for the fact that it often fails, almost, if not quite, to yield honey; and the quality of the honey is always second class and the color is dark. At the present time the Japanese has so far out-tripped all other varieties that we have dropped them entirely from our list. It makes a much stronger growth than the old kinds, gives a much larger yield of grain, and also matures its seed a little earlier. During the past season the yield has been so great as to put buckwheat flour as well as grain at a lower price than it has been known before for years. We have an 8 page pamphlet, being a collection of articles from different localities, telling just how to raise buckwheat. Mailed for 5c, or given free to all purchasers of our seed. Please notice that buckwheat can not very well be sent ALONE BY ITSELF, either by mail, freight, or express, without the expense of shipment being more than the value. If you want a peck, or half a bushel, it should be ordered by freight with other goods, unless you are willing to pay more than the seed is worth, in the way of charges.

Rape. Oz 5 cts.; lb. 15 cts.; 10 lbs. or over, 6 cts. per lb.; 100 lbs., \$5.00. By mail, 9 cts. per lb. extra.

The above rape is for blossoms and seed; although it is sometimes sown for forage it is by no means equal to the Dwarf Essex.

Where rape is used for making oil, it often yields a considerable quantity of honey. In most localities, however, it

is liable to be destroyed by the black flea, if sown earlier than July. It is sown like turnips, and about 3 lbs. of seed is enough per acre. It may blossom in four weeks after being sown, and stay in blossom four weeks longer.

Dwarf Essex Rape. 1 lb., mail postpaid, 20c; freight or express, 50 lbs., 9c per lb.; 100 lbs., \$8.00.

This plant has been rapidly coming to the front in the last few years as a forage plant, especially for sheep and lambs. It may be sown in May, June, July, or August; and at our Ohio Experiment Station it gave from 8 to 12 tons per acre in 91 days after planting. Like other new forage-plants, stock must be taught to eat it. It is a splendid thing to put on after early potatoes. After the first cutting or eating off it will start again; and it is so hardy that it will grow until the ground is frozen several times giving feed even as late as the middle of December, in our locality. It possesses remarkable fattening qualities. An acre of it will feed over 30 sheep for a month. Directions for raising will be mailed free on application. This rape is not a honey plant, unless grown for seed. See "leaflet," mailed on application.

Cow Peas. The stock pea of the South. Postpaid by mail, 1 lb., 15c; pk., 40c; ½ bu., 75c; bu., \$1.25.

Much interest has been manifested in this stock pea of late, both for fodder and plowing under. The bloom also furnishes considerable quantities of honey in localities where it is raised for silage. The above price is for the variety called Wonderful and Clay. We can furnish the Wainwright and Mammoth at 85c per ½ bushel or \$1.50 per bushel. In quantities of one ton or more they can be shipped direct from Goldboro, N. C. The Mammoth is the earliest of all. For further description see leaflet, mailed on application.

Seven-top Turnip. Oz. 5c; lb. 20c; 10 lbs. \$1.50. If wanted by mail, 10c per lb. extra.

This plant, although not equal to the Spider plant and the Simpson honey plant, is entitled to a place next to them, because it bears its crop of honey in the spring, between fruit blossoms and clover. It should be sown in Aug. and Sept. It bears no root like the ordinary turnip, but only foliage that is used for greens. Excellent for plowing under.

Sunflower, Mammoth Russian. Oz. 5c; lb. by mail, 15c; 10 lbs. or over, by freight or express 5c per lb.; 100 lbs., 4c per lb.

This plant is visited by the bees in great numbers in some localities, while in others it is scarcely noticed; but, as the seeds usually pay all expenses of cultivation, it holds its place as a honey-plant. The mammoth Russian bears by far the largest blossoms, as well as the largest seeds.

The above are the only plants I know of that can be profitably grown by the bee keeper; that is, the honey they yield would probably pay, in connection with the profit on the plant for other purposes.

Soja Bean. Price, pt., 10c; pk., 75c; bush., \$2.50. About 1 bushel (60 lbs.) is needed per acre. For description see leaflet, mailed on application.

American Coffee-berry. Package, 5c.

This is probably a variety of the soja beans. At first we were inclined to think from the appearance that it was the same; but on making it into coffee we had to admit that the coffee berry is something different, and much more like genuine coffee. If I were going to use coffee at all I should prefer this to the real thing—principally, however, because it is nourishing instead of being stimulating. Besides, the coffee-berry matures very much earlier than the soja bean. In order that you may all try the coffee for yourselves we offer it at the following low prices: ½ pint, 10c; pint, 15c; quart, 25c; peck, \$1.75. If wanted by mail, add 10c per quart extra for postage and packing.

The following plants yield honey, and many of them in considerable quantities; but they are so little used for other purposes that there is little inducement to raise them by the acre; and let us bear in mind that it must take acres of any plant to yield honey enough to amount to any thing.

Borage. Oz. 10c; lb. \$1.40; if wanted by mail, add 10c per lb. extra.

A strong, hardy, rapidly growing plant, bearing a profusion of blue flowers. It may be sown any time, but will, perhaps, succeed best, at about corn-planting time. As it grows tall and branches out considerably it should have plenty of room. I know that bees are very busy on it, all the day long, from July until Nov., but I do not know how much honey an acre of it would furnish. It is easily tried, because it grows so readily, and if sown on the ground after early potatoes are dug, you will get a nice crop of fall bloom. Sow broadcast, or in hills like corn. Borage is also used as a salad, or cooked as spinach.

Catnip. Oz. 10c; lb. \$1. If wanted by mail, add 10c per lb. extra.

This has been very much talked about, and we have record of some experiments with an acre or more; but, if I am correct, only a few have ever yet seen a barrel of catnip honey. Sow in the fall.

Dandelions. Package 5c; oz. 50c.

I presume everybody can get dandelion seeds and roots without buying them, but for all that, I have much faith in an acre of cultivated dandelions. French thick-leaved is superior for "greens," and by the way our bees take to our "patch" of it, I think it must be superior for honey.

Motherwort. Prices same as for catnip.

Figwort, or Simpson Honey-plant. Oz. 20c; lb. \$2. By mail, 10c per lb. extra, for postage.

This is a queer tall weed that grows in fields and woods and bears little cups full of honey. It bears honey all the day long from July to October. Very hardy; blooms first year,

and after that shoots up from the root every year, but needs planting anew about every three years. The seed sometimes lies in the ground many months before germinating. If sprinkled on the top of damp leaf-mold, packed hard in a box, and rolled hard, being kept dark and damp in a warm place, they will sprout in a week or two. Then give all the light and air possible, but not too much water.

Mignonette. Oz. 10c; lb. \$1; by mail, add 10c per lb.

This is a great favorite with the bees, and also with those who are raising plants for their bees; but although we have sold considerable of the seed for bee pasturage, I am not sure that any one has ever made it pay in dollars and cents for the honey alone.

Mustard. Common (either white or black). Oz. 5c; lb. 15c. Add 10c per lb. if to be sent by mail.

The honey from this is said to be very light, equal to any in flavor, and to command the highest price in the market.

Spider Plant. Package 5c; oz. 20c; lb. \$2. Postage 10c per lb. extra.

This plant under favorable circumstances, yields more honey than any thing that ever before came under my observation. In Oct. 1879 each flower yielded drops so large that a bee had to make two or more journeys to get it all, and I succeeded in dipping the honey from the plant with a spoon, until I half filled a bottle with it, for experiment. As it yields only this honey early in the morning, and late in the evening, it will go nicely with the Simpson honey plant. I should think it quite probable that 5 acres of each of these plants would keep 100 colonies busy enough to be out of mischief during a dry fall, when bees are so apt to be robbing. For particulars concerning both plants, see A B C of Bee Culture. The Spider plant is an annual, and should be sown every year. It grows almost too fast with hotbed treatment, but will blossom in August if sown in the open ground in May.

Portulaca. 5c per package

Best mixed. A bed of portulaca, say a rod square, will show more bees in the working season, for the area, than any other plant I know of; furthermore, a bed of mixed portulaca, equivalent to a square rod, makes one of the handsomest, if not the handsomest of sights, when in full bloom, the whole floral kingdom affords. It does not seem to me that any bee-keeper ought to be without a bed; and I might also say, no lover of flowers can well afford to forego the gorgeous spectacle of a bed of mixed portulaca, especially when the seed is only 5 cents a paper. One paper will cover a square rod of ground nicely. You can have the square rod laid out in artistic beds and walks, if you choose.

Rocky Mountain Bee-plant *Cleome integrifolia*. Oz. 15c; lb. \$1.25, postage 10c extra.

This is closely connected with the noted Spider plant (*C. pungens*), these two being the only species of the *Cleome*. With us, it is much inferior to the Spider plant as a honey producer. We have reports from some localities of its yielding large quantities of honey, hence quite a demand for the seed is the result.

Sage, White (*Salvia argentea*). Oz. 35c; lb. \$4.

Is called the honey-plant of California, and belongs to the Labiate or Mint family, the same as Rosemary, Balm, Hoarhound etc.

Cerulea, Bee Clover. Oz. 10c; lb. 75c; by mail, add 10c for bag and postage.

This latter blossoms in about six weeks after sowing, and bears a small blue flower.

Chapman Honey-plant. Packet 5c; oz. 20c.

The large globular blossoms exude pure honey, and if inclosed in a paper bag so the bees are kept away the blossoms will become quite sticky with the honey.

Any of the above seeds will be sent in 5c packages, to those who would like just a few to try.

Printed Sticks.

For Seed Potatoes, Strawberry-plants, Fruit-trees, and General Nursery Stock.

Don't you want to please your customers by giving them a nice plain label that they can mail to a stake, with the print so plain it can be read quite a distance off, and something that neither rain nor sun can obliterate? If so, we can furnish you printed labels, on clean white basswood, for 25 cts. per 100, or \$1.50 per 1000. If wanted by mail, add 20 cts. per 100 extra for postage.

Samples will be forwarded free of charge, on application. Please bear in mind that at these exceedingly low prices, you must order at least 25c worth, (100 or less) of a kind. We can not set up the type and print any number—not even half a dozen—for less than 25 cts. The labels are 7½ inches long and ¾ inch wide, but where a considerable quantity is wanted, say 5000 or 10,000, we can make them of different sizes and shapes. The above sizes are for the regular-sized sticks, that we keep in stock. One other thing: At the above prices not more than two or three words are to be printed on a stick. Of course, we can print something extra in smaller type, but we shall have to have extra pay where you want, say, more than ten words. To have the lettering large and plain, so it can be read from a distance, there should not be more than one word on a stick, or two short words, or three very short ones. We make these explanations because there has been some misunderstanding in regard to the

matter. Better have us send you samples before ordering, if you can do so.

Of course the wording on the label can be made to suit yourself.

Insecticides.

Blue Vitriol and Paris Green.

Blue vitriol (sulphate of copper), 4 lbs., 25 cts.; 50 lbs. or more 6 cts. per lb.; barrel, 450 lbs., 5 cts. per lb. Paris green is such unpleasant stuff to handle that we prefer to sell it only in original packages. These are put up securely, and may be shipped without injury, as follows: 4-oz. packages, 7 cts. each; ½-lb. packages 12 cts. each; 1-lb. tin cans, 22 cts.; cans holding either 2 or 5 lbs., 20 cts. per lb.; 14 lbs. at 19 cts.; 28 lbs., 18½ cts.; 56 lbs., 17½ cts., and 100 lbs. at 17 cts. per lb.

Tobacco-Dust.

This is sprinkled over the foliage, and on the ground around lettuce in the greenhouse or on melon or other vines just as they are coming up, and is one of the best and cheapest insecticides known. One lb., by mail, 20c; 5 lbs., by express or freight, 3c per lb; 10 lbs., 2½c per lb; 25 lbs., 2c per lb.; 100 lbs., \$1.75.

Pyrethrum Roseum.

(*Persian Insect-Powder.*)

This is not only a pretty plant for the flower garden, but the flowers, gathered and dried when in full bloom, and then finely powdered, furnish us the Persian insect powder, of which so much has been said. With us it has been the surest thing to kill all sorts of small insects (laying them out dead in even a few minutes), of any thing we have ever got hold of. It will also kill the green fly in greenhouses. When used in the insect-powder bellows, described below, but a very little of the powder is required.

With the powder-gun (see "putty bulb" in next column), you can kill every fly in any room of the house, within an hour. Of course, the doors and windows of the room should all be closed. In painting new houses in the summer time, when flies are troublesome, the instrument is worth more than it costs, for this alone. It is not at all poisonous or injurious to human beings.

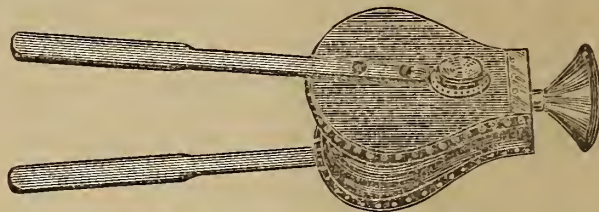
Price of the powder, all ready for use, one ounce, 5 cts.; ¼ lb., 10 cts.; 1 lb., 35 cts.; 10 lbs., \$3.00. Price of the seeds, one packet, 5 cts.; one ounce, \$1.00; 1 lb., \$10.00. By mail, 18c per lb. extra on powder, and 9c on the seeds.

Powder-guns for Pure dry Paris Green, Hellebore, Pyrethrum, &c.

During the past year, or I might say for two years past, there has been an effort made to substitute pure dry Paris green for spraying potatoes, currant-bushes, and other plants, in place of mixing the Paris green or hellebore with water. During 1896 I gave one of these machines a good trial, using principally the Leggett Champion dry-powder gun; and there is no mistake about it, the machine does the work perfectly, with less labor and expense for poison, than any of the liquid machines. If I am correct, however, they have not yet succeeded in making it a success for spraying fruit-trees for the codling-moth, and for the fungus producing scab. With one of these machines a man will go over an acre in an hour; and, if the bugs are not very bad, he will not need more than four ounces of Paris green, costing 7 cts. for the poison, and, say, 15 cts. for the labor. The machine powders two rows at once, and the powder is placed directly on the potato-vines or currant-bushes so far away from the operator that none of the poison gets into his lungs if he takes any sort of pains in managing properly. Our premises were kept entirely free from every insect-enemy, with comparatively little labor. The only objection at present is the price—\$5.00 for the small machine and \$7.50 for the large one. Later on in the season, Hotchkiss Brothers, of Wallingford, Ct., furnished us a machine for \$5.00 that seems to answer every purpose of the \$7.50 Leggett gun. These machines can be graduated so as to measure the quantity put on an acre, to within an ounce, and the powder can be applied only to the plant, so that but very little of it is wasted by scattering it over the ground where there are no plants.

We have still another powder-dusting bellows called the Insect Exterminator. This machine, which consists of a long-handled bellows, so made as to get the powder all down on the ground, and away from the operator, distributes Paris green,

hellebore, or any other insecticide, almost as well as the Leggett and Hotchkiss machines, while the price is only \$1.00. Of course, the higher-priced machines will be preferable where one has to go over many acres. It throws the material in a little



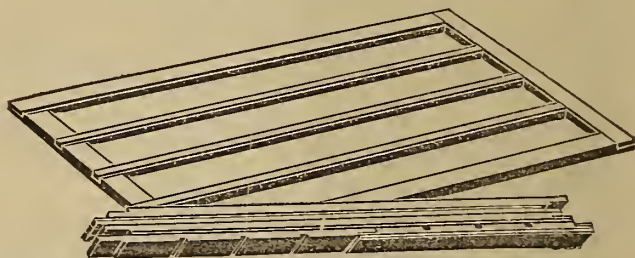
INSECT EXTERMINATOR; PRICE \$1; BY MAIL, \$1.25.

dusty cloud, and seems to be proof against clogging or stopping up, which has been the great fault of all the low-priced machines. We can furnish any of the dry-powder guns mentioned above, at the prices quoted. We have in stock, however, only the Hotchkiss and the Insect Exterminator.

Putty-Bulb.

For setting glass for greenhouses, for repairing sash, etc. This is a rubber bulb, with a nozzle, for running liquid putty along where the glass lies in the sash. No person who has half a dozen sash should be without one. Full instructions for preparing the putty, with each. With a little different arrangement the above makes the nicest kind of powder-gun for using a small quantity of pyrethrum, or insect powder. In ordering, please state which purpose you wish it for. Price 15c; post, 5c.

Cold-Frame or Hot-Bed Sash.



As we are now approaching the season for using sashes for protection from the frost, we call attention again to the new-style light hot-bed sash we have been using for the past two or three years. At first it was thought that such very light sash would not stand the weather and handling; but in our own gardens our boys found them a very great convenience indeed on account of their lightness. It is true, they are a little more apt to be blown off by the wind; but when placed on a nice well-fitting bed, so as to cover the bed entire, the wind rarely moves them. When used for constructing small cheap greenhouses they should be fastened on with appropriate hooks, or be held down with screws. There is a special advantage in using these for greenhouses for raising vegetables, because the movable sashes may be kept piled up, stowed away out of the way until they begin to be needed in the fall; and in the same manner they may be moved in the spring, and stored away, thus giving the plants the benefit of the sun and rain as soon as the weather will permit. For all hardy or half-hardy stuff this is a great convenience.

The sash are of the regular size, 3 ft. 4 inches by 6 ft., for four rows of glass, 8 inches wide. If any prefer larger glass we will furnish sash for 3 rows of 11 inch glass at the same price.

These sash are usually shipped from here knocked down at a low rate of freight, and they can be put together by anybody. If done securely they are just as strong as the regular sash. They are 1½ in. thick, outside bars about 3 inches wide, and inside ones about 1¼. The bars are grooved to slip the glass in place. If a light of glass is broken, move them up close and slide another in from the bottom end. If any prefer the bars rabbeted to set glass in putty, we will make them so on request.

Price of one sash, in the flat, for sample, without glass, 70 cts.; 5 in the flat, 65 cts. each; 10 in the flat, 60 cts. each. Glass, 8x10, just right for the above, \$2.75 per box of 9 lights; 5 boxes, \$2.65 per box; 10 boxes, \$2.60 per box; less than box, at 3½ cts. per light.

Sash put up, no glass or paint, 10 cts. each extra; 10 cts. each extra for each coat of paint, and \$1.00 each extra for glass set in place, making the sash

put up, painted two coats, and filled with glass, at \$1.95 each in lots of 5. The risk and freight charges are so much more shipped put up with glass that we do not recommend you to order this way, and we can not well pack less than 5 safely.

We would not advise shipping a less number than five; but if you take our advice you will have all your glass sash shipped in the flat. In this case they go as fourth-class freight; whereas, all complete they will have to go as first-class, and some roads rate them as double first-class.

GOODS ESPECIALLY FOR POULTRY RAISERS.

Pure Bone Meal.

Coarsely ground, expressly for poultry. Per lb., 5 cts.; 5 lbs., 3 cts. per lb.; 10 lbs., 2 1/4 cts. per lb.; by the bag of 100 lbs., \$2.00; 200 lbs., \$3.75. Fowls will eat this almost as greedily as corn; and it not only furnishes material for egg shell, but it gives them considerable animal matter besides. Excellent for laying hens. It is sure cure for thin-shell eggs.

Bone meal ground fine, for gardening purposes, same price as the above.

NEST-EGGS polished wood, each 2c; 10, 15c; 100, \$1.25. Postage 3c each.

BOOKS ON GARDENING, FARMING, &C.

Figures on the left hand indicate amount of postage to be added when books are to be sent by mail.

I have indicated my opinion of the books by characters as follows: Books that I approve I have marked with a*; those I especially approve,**.

5 | Tile Drainage, by W. I. Chamberlain**..... 35 Fully illustrated, containing every thing of importance clear up to the present date.

The single chapter on digging ditches, with the illustrations given by Prof. Chamberlain, should alone make the book worth what it costs, to every one who has occasion to lay ten rods or more of tile. There is as much science in digging as in doing almost any thing else; and by following the plan directed in the book, one man will often do as much as two men without this knowledge. The book embraces every thing connected with the subject, and was written by the author while he was engaged in the work of digging the ditches and laying the tiles HIMSELF, for he has laid literally miles of tile on his own farm in Hudson, O.

3 | Tomato Culture**..... 35 In three parts. Part first.—by J. W. Day, of Crystal Springs, Miss., treats of tomato culture in the South, with some remarks by A. I. Root, adapting it to the North. Part second—By D. Cummins, of Conneaut, O., treats of tomato culture especially for canning factories. Part third.—By A. I. Root, treats of plant-growing for market, and high-pressure gardening in general.

4 | A B C of Potato Culture, Terry**..... 35 This is T. B. Terry's first and most masterly work. The book has had an enormous sale, and has been reprinted in foreign languages. When we are thoroughly conversant with friend Terry's system of raising potatoes, we shall be ready to handle almost any farm crop successfully. It has 48 pages and 22 illustrations.

10 | Farming for Boys*..... 1 15 This is one of Joseph Harris' happiest productions, and it seems to me that it ought to make farm-life fascinating to any boy who has any sort of taste for gardening.

| Our Farming, by T. B. Terry**..... 1 50 In which he tells "how we have made a run-down farm bring both profit and pleasure."

This is a large book, 6x9 inches, 367 pages, quite fully illustrated. It is Terry's first large book; and while it touches on the topics treated in his smaller handbooks, it is sufficiently different so that no one will complain of repetition, even if he has read all of Terry's little books. I should call it the brightest and most practical book on farming before the world at the present day. The price is \$2.00 postpaid; or clubbed with GLEANINGS for 2.50. Those who are already subscribers to GLEANINGS may have it postpaid by sending us 1 50 more. We are so sure it will be worth many times its cost that we are not afraid to offer to take it back if any one feels he has not got his money's worth after he has read it. If ordered by express or freight with other goods, 10c less.

5 | An Egg Farm, Stoddard**..... 40 No matter whether you raise eggs on a large scale or a small scale, you can not afford to miss reading friend Stoddard's book. I do not know that I ever got hold of any piece of fiction—not even Robinson Crusoe, that so thoroughly fascinated me as these chapters in regard to raising poultry on a large scale. The work has 95 pages and 42 illustrations.

7 | Farm, Gardening, and Seed Growing*..... 90 This is by Francis Brill, the veteran seed-grower, and is the only book on gardening that I am aware of that tells how market-gardeners and seed-growers raise and harvest their own seeds. It has 166 pages.

12 | Gardening For Pleasure, Henderson*..... 1 35 While "Gardening for Profit" is written with a view of making gardening PAY, it touches a good deal on the pleasure part, and "Gardening for Pleasure" takes up this matter of beautifying your homes and improving your grounds, without the special point in view of making money out of it. I think most of you will need this if you get "Gardening for Profit." This work has 246 pages and 134 illustrations. (Retail price \$2.00.)

10 | Gardening for Profit,** New Edition 1 35

This is a late revision of Peter Henderson's celebrated work. Nothing that has ever before been put in print has done so much toward making market-gardening a science and a fascinating industry. Peter Henderson stands at the head, without question, although we have many other books on these rural employments. If you can get but one book, let it be the above. It has 376 pages and 138 cuts. (Retail price \$2.00.)

5 | Garden and Farm Topics, Henderson*..... 60

5 | Gardening for Young and Old, Harris**.... 90 This is Joseph Harris' best and happiest effort. Although it goes over the same ground occupied by Peter Henderson, it particularly emphasizes thorough cultivation of the soil in preparing your ground; and this matter of adapting it to young people as well as to old is brought out in a most happy vein. If your children have any sort of fancy for gardening it will pay you to make them a present of the book. It has 187 pages and 46 engravings.

10 | Greenhouse Construction, by Prof. Taft** 1 15

This book is of recent publication, and is as full and complete in regard to the BUILDING of all glass structures as is the next book in regard to their management. Any one who builds even a small structure for plant-growing under glass will save the value of the book by reading it carefully.

15 | How to Make the Garden Pay**..... 1 35

By T. Greiner. This is a new book, and it gives the most explicit and full directions for gardening under glass of any book in the world. Those who are interested in hot-beds, cold-frames, cold-greenhouses, hot-houses, or glass structures of any kind for the growth of plants, can not afford to be without the book.

3 | Vegetables under Glass, by H. A. Dreer**.. 20

This is a new book by a veteran in the work, full of illustrations from real life, and by all odds, the most valuable book we have ever had for such a small price.

5 | Gregory on Cabbages; paper*..... 20

5 | Gregory on Squashes; paper*..... 20

5 | Gregory on Onions; paper*..... 20

The above three books, by our friend Gregory, are all valuable. The book on squashes especially is good reading for almost anybody, whether they raise squashes or not. It strikes at the very foundation of success in almost any kind of business.

10—Irrigation for the Farm, Garden, and Orchard, Stewart*..... 1 10

This book, so far as I am informed, is almost the only work on this matter that is attracting so much interest, especially recently. Using water from springs, brooks, or windmills, to take the place of rain, during our great droughts, is the great problem before us at the present date. The book has 274 pages and 142 cuts.

3 | Onions for Profit**..... 40

Fully up to the times, and includes both the old onion culture and the new method. The book is fully illustrated, and written with all the enthusiasm and interest that characterize its author, T. Greiner. Even if one is not particularly interested in the business, almost any person who picks up Greiner's books will like to read them through.

2 | Celery for Profit, by T. Greiner**..... 25

The first really full and complete book on celery culture, at a moderate price, that we have had. It is full of pictures, and the whole thing is made so plain that a schoolboy ought to be able to grow paying crops at once, without any assistance except from the book.

8 | Domestic Economy, by I. H. Mayer, M. D.** 30

This book ought to save at least the money it costs, each year, in every household. It was written by a doctor, and one who has made the matter of domestic economy a life study. The regular price of the book is \$1.00; but by taking a large lot of them we are enabled to make the price only 30 cts.

5 | Manures; How to Make and How to Use them; in paper covers..... 30

6 | The same in cloth covers..... 65

Covering the whole matter, and discussing every thing to be found on the farm, refuse from factories, mineral fertilizers from mines, etc. It is a complete summing-up of the whole matter. It is written by F. W. Sempers.

2 | Rats: How to Rid Farms and Buildings of like Character..... 15

This little book ought to be worth dollars instead of the few cents it costs to any one who has ever been troubled with these pests, and who has not? It is written in such a happy vein that every member of the family will read it clear through, just about as soon as they get hold of it. It contains a complete summing up of the best information the world can furnish.

5 | A B C of Strawberry Culture, by T. B. Terry and A. I. Root, 144 pages; 32 illustrations** 35

10 | The New Agriculture, or the Waters Led Captive.* This is a \$1 50 book..... 40

3 | Maple Sugar and the Sugar-bush, by Prof. A. J. Cook*..... 35

8 | What to Do, and How to be Happy While Doing It, by A. I. Root**..... 75

The above book is intended to solve the problem of finding occupation for those scattered all over our land, out of employment. The suggestions are principally about finding employment around your own homes. The book is mostly upon market-gardening, fruit culture, poultry-raising, etc. I think it will be well worth the price, not only to those out of employment, but to any one who loves home and rural industries. Price in paper covers, 50 cts. Eight cents extra by mail.

The A. I. ROOT CO., Medina, O.

"PLANET JR." GARDEN TOOLS.

Space will not permit illustrating and describing all the "Planet Jr." tools, but we will gladly send a fully illustrated catalog to any who desire it; and we can supply promptly any thing ordered. Shipments, in most cases, will be made direct from factory in Philadelphia, or from its numerous distributing depots at Pittsburg, Indianapolis, etc. "Planet Jr." goods are standard machines and the best on the market. Prices are greatly reduced from last year, and are so low that the manufacturers now insist that everybody shall sell at the same price. In sending your orders to us you can therefore rely on getting bottom prices.

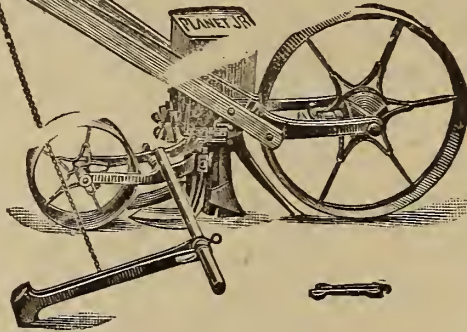
The New "Planet Jr." No. 3 Hill-Dropping Seed-Drill.

Sows either in Hills or in Continuous Row.

Until recently there was no such thing as a hill-dropping seed drill. The most modern drills sowing continuously only; but the demand for a drill that could be adjusted to sow in hills was very great. This drill will sow a continuous row, in the ordinary way, with the greatest regularity, but its distinctive feature is that it will drop neatly in hills, other four, six, eight, twelve, or twenty-four inches apart. It drops the furrow, drops in hills or drills, covers, rolls down, and marks the next row, all at one operation. The hopper holds three quarts. The wheel is thirteen inches high. It is changed in a moment from hill-dropping to drill work. It has a force feed, sows equally well whether the hopper is full or contains only a paper of seed, and will not injure delicate seed, such as radish, cabbage, etc., which are so often peeled or crushed by drills having agitators or metal wheels. It is nicely adapted to all conditions of land, working especially well in fresh ground or when planting on a ridge. The plow is adjustable, and opens a very narrow furrow, which is a great advantage for after-cultivation.

Price
\$9.00.

This is the first year that this machine has been offered widely by the manufacturers of the celebrated line of "Planet Jr." goods; but the machine has been tested thoroughly by careful gardeners and nurserymen during the season of 1895, and the manufacturers guarantee it to give entire satisfaction. Price \$9.00.

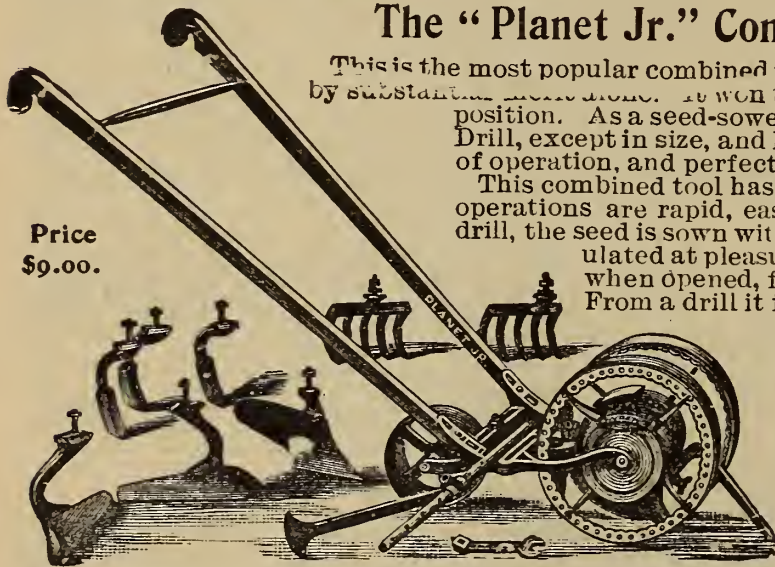


The "Planet Jr." Combined Drill and Wheel-Hoe.

This is the most popular combined tool known; and its friends have been gained by substantial demonstration. It won the highest and only award at the Chicago Exposition. As a seed-sower it is identical with the No. 2 "Planet Jr." Drill, except in size, and has all its merits, its strength, durability, ease of operation, and perfection of work.

This combined tool has a complete set of cultivating tools, and all its operations are rapid, easy, perfect, and delightful. When used as a drill, the seed is sown with great regularity and at uniform depth, regulated at pleasure. The hopper holds one quart. The door, when opened, forms a convenient spout for filling with seed. From a drill it is changed to its other uses by unscrewing but two bolts, when any of the attachments shown in the cut can be instantly attached. In short, every purchaser of this machine will find it an excellent seed-sower; a first-class double-wheel hoe for use when plants are small; a first-class single-wheel hoe; an excellent furrower; an admirable wheel cultivator; a capital garden-rake; a rapid and efficient wheel garden-plow; and that it is without an equal in variety of tools, easy adjustment, lightness, strength, and beauty.

Price
\$9.00.



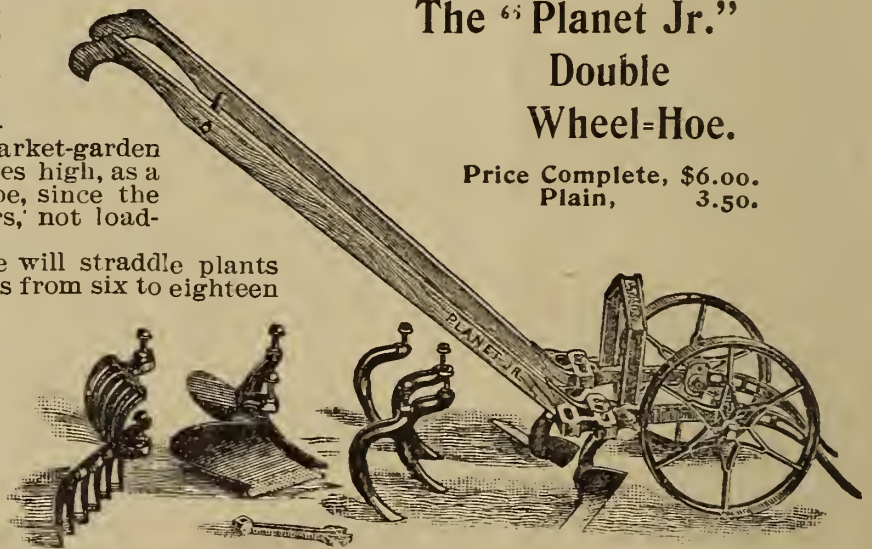
Thousands of farmers and gardeners who own this tool save its cost one or more times every year; for in an onion-field, and among many other crops, one can do more and better work with it than six men with ordinary hoes. It is invaluable for all market-garden crops. The wheels are only ten inches high, as a high wheel is wrong for a wheel-hoe, since the wheels are simply depth-regulators, not load-carriers.

The "Planet Jr." Double-wheel Hoe will straddle plants eighteen inches high, and finish rows from six to eighteen inches apart at one passage. One hoe stands slightly ahead of the other to prevent dragging out young plants. The new frame permits the changing of attachments *without removing the nuts*. All the tools shown in the cut go with the machine for the price; and all the blades are steel, hardened in oil, and polished. The wheels are adjustable to make the work shallow or deep, as required, and to adapt the machine to all width rows. The tool is charming in every style and kind of work, the admiration of all who see it in operation, and is the acknowledged standard the world over. Price \$6.00.

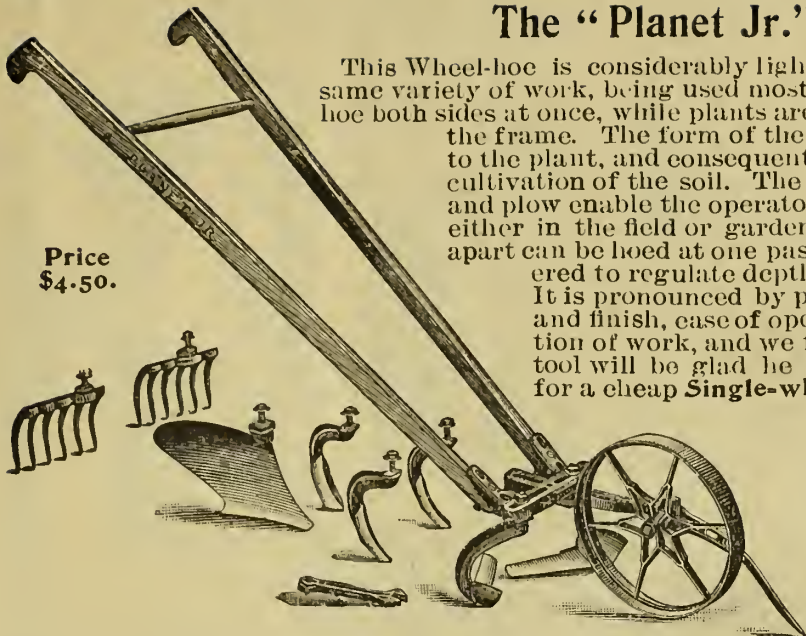
To accommodate those who have little work but hoeing, we offer the above machine with hoes only, under the name of "Planet Jr." *Single* Double-wheel Hoe, at \$3.50. The other parts can be added at any time, and will be found to fit.

The "Planet Jr." Double Wheel-Hoe.

Price Complete, \$6.00.
Plain, 3.50.



The "Planet Jr." Single-Wheel Hoe.



Price
\$4.50.

This Wheel-hoe is considerably lighter than the double, but does almost the same variety of work, being used mostly between the rows; yet it can be used to hoe both sides at once, while plants are small, by placing the wheel at one side of the frame. The form of the hoes insures a forward slanting cut next to the plant, and consequent close work without danger, and thorough cultivation of the soil. The rakes and cultivator-teeth and the hoes and plow enable the operator to perform almost every variety of work, either in the field or garden. All rows from six to eighteen inches apart can be hoed at one passage. The frame is quickly raised or lowered to regulate depth; and the wheel has an extra broad face. It is pronounced by practical men without an equal in design and finish, ease of operation, variety of adjustment, and perfection of work, and we feel confident that every one who tries this tool will be glad he did so. **Price \$4.50.** To supply a demand for a cheap **Single-wheel Hoe**, we offer the above machine, with the hoes only, at \$2.75, and the other attachments can be added at any time, and will be found to fit.

The "Fire-Fly" Single-Wheel Hoe, Cultivator, and Plow.

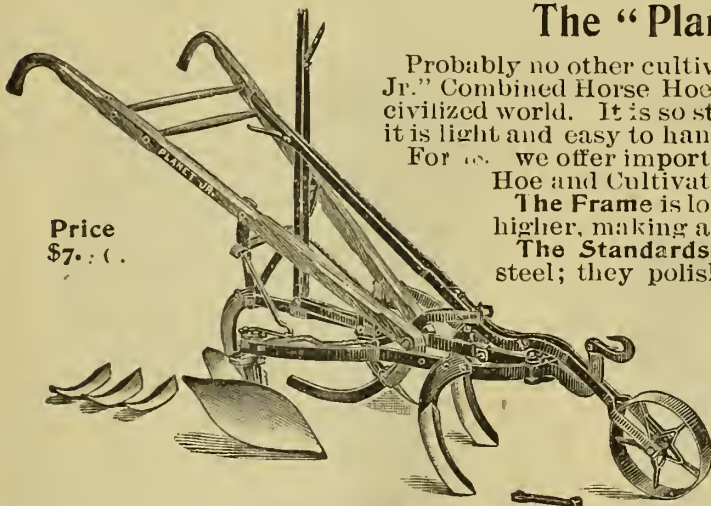
This popular tool is exactly the same as the "Planet Jr." Single-wheel Hoe, excepting that it does not have the rakes or leaf-

lifter. The attachments are a pair of hoes that can be set to work to or from the row, a set of three reversible cultivator teeth, and a large garden-plow. The whole tool is light and strong, and capable of standing hard usage for years. **Price \$3.75.**

The "Fire-Fly" Wheel Garden-Plow.

This tool is invaluable for those who have small gardens. The moldboard is tempered and polished steel. The depth may be changed very quickly. The low price brings it within reach of all. **Price \$2.00.**

The "Planet Jr." No. 8 Horse-Hoe.



Price
\$7.00.

Probably no other cultivating-machine is so widely known as the "Planet Jr." Combined Horse Hoe and Cultivator, for it is in use throughout the civilized world. It is so strongly built as to withstand incredible strain, yet it is light and easy to handle.

For this we offer important improvements in our No. 8 "Planet Jr." Horse Hoe and Cultivator, as described below:

The Frame is longer than usual, and about one and one-half inches higher, making a tool that will not clog easily.

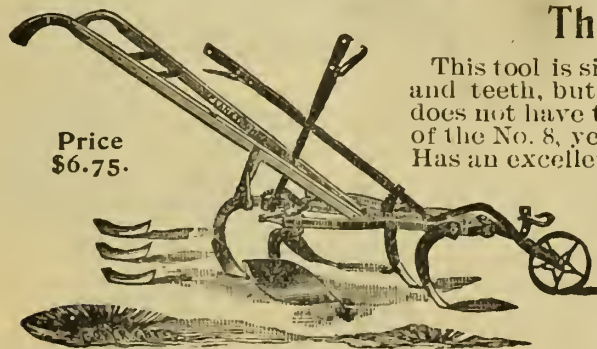
The Standards are framed up hollow with round throats of stiff steel; they polish quickly, and free themselves readily from obstructions, and they clasp the frame and strengthen it.

The Depth is under perfect control by means of a new lever wheel, and the new patented depth-regulator, which are moved instantly in unison by a single lever, making exact work, steadying the machine, and relieving the operator.

The Expander. This is an entirely new pattern, superior to all other forms; exceedingly strong, simple, accurate, and positive in all positions.

Handle and Braces. These are also absolutely new, and the most effective and stiffest combination known, at once making the tool rigid, yet allowing every adjustment of handles in height and sidewise. Every part is perfected to make the tool acceptable to the intelligent farmer, who knows the best is always the cheapest. **Price \$7.00.**

The "Planet Jr." No. 6 Horse-Hoe.



Price
\$6.75.

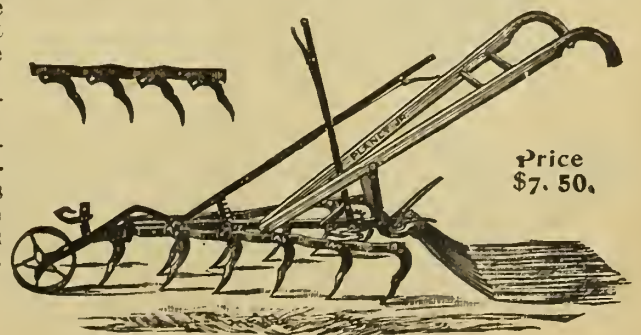
This tool is similar to the No. 8 Horse-Hoe. It has the same standards and teeth, but is made in other respects like the popular 1895 pattern. It does not have the improved depth-regulator and the expander and braces of the No. 8, yet it is strong and serviceable, and will give full satisfaction. Has an excellent expander, and handles adjustable both perpendicularly and sidewise. **Price \$6.75.** No. 5, with plain instead of lever wheel, \$6.25; No. 5, without wheel, \$5.50.

"Planet Jr." 12-Tooth Harrow.

This comparatively new tool has grown rapidly into favor with market-gardeners and strawberry-growers. It is carefully made and finished, has a high frame, and the chisel-shaped teeth cut an inch wide each, and may be worn

down three inches before that width is lessened or the teeth worn out; even then they are cheaply replaced. It may be set with teeth trailing, by simply changing one bolt in each tooth.

The foot-lever pulverizer is a capital addition for preparing ground for the seed-drill or for plant-setting. Hand-levers regulate both width and depth while in motion; it contracts to 12 inches, and may be further reduced in width by taking off the outside teeth; it expands to 32 inches. It cultivates deep without throwing earth upon the plants; and the smooth, round-throated teeth turn strawberry-runners without injuring them. **Price, plain, ; with wheel, complete, \$7.**



Price
\$7.50.

THE A. I. ROOT CO., Medina, O.

FIG. 1.

SPRAY PUMPS and SPRINKLERS.

Price \$2.70.

Complete Line at Prices within reach of all.



It is becoming every year more evident that, in order to secure perfect fruit or foliage, it is absolutely essential that the trees and shrubs be sprayed with poisonous arsenites one or more times each season at just the right time in order to kill the insect pests which work so much havoc. If you would secure a crop of salable fruit, spraying is as necessary as the proper cultivation and enriching of the soil. To do this work most easily and economically you require the best tools to work with. We believe the line we offer here can not be surpassed in quality, efficiency, and price.

The Little Giant Bucket Brass Spray-Pump is shown in Fig. 1. It includes 4 ft. of 1/2-inch hose and Myers spray and sprinkler nozzles as shown. The Vermorel or Bordeaux nozzles may be had instead of Myers, when specified, at 25c each extra. These nozzles are shown above. The Myers is the simplest and least liable to get out of order. The aperture in the Bordeaux can be varied in size from the finest spray to a stream. The degorger in the Vermorel is very handy for clearing the spray tip of any obstruction. The Myers is regularly furnished on the bucket pumps, Fig. 1, 3, and 6; the Bordeaux on the knapsack, Fig. 2, and the Vermorel on the barrel pumps, Fig. 7, unless otherwise ordered.

The bucket pump, Fig. 1, is the latest approved type. Can also supply the Myers style, shown in Fig. 6, at same price. Pipe extension, 50c each extra. The Moherman Pump, shown Fig. 3, is the cheapest brass bucket pump to be had anywhere, and a good one for the price. By unscrewing the nozzle you can throw a stream, and thus use the pump for washing windows, buggies, etc. Fig. 6 shows the manner of operating the pump with pipe extension, which is necessary to reach all parts of tall trees from the ground.

FIG. 2. Knapsack Spray Pump. Price \$5.40.

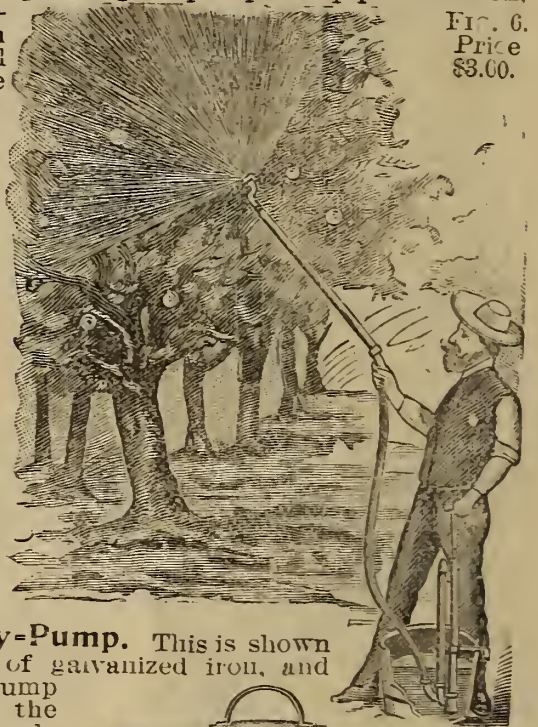
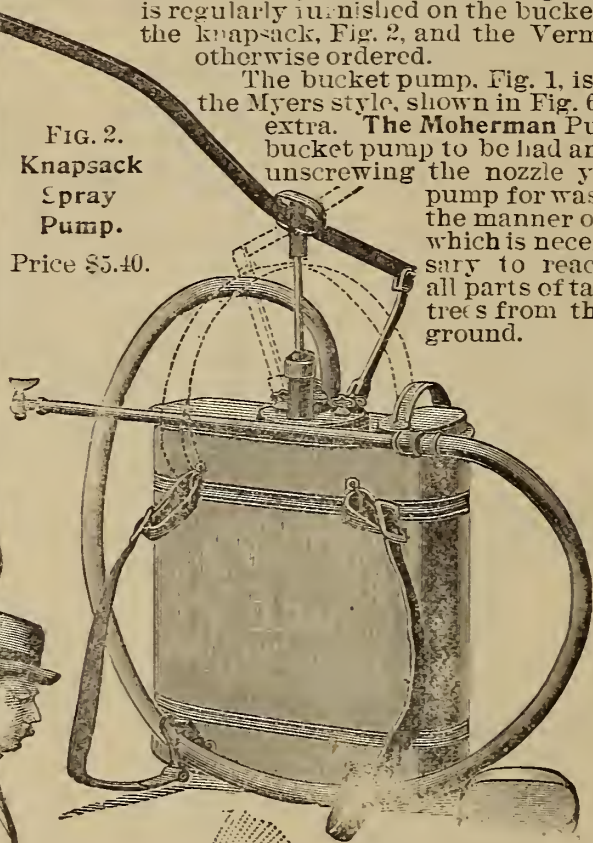


FIG. 6. Price \$3.00.

Knapsack Spray-Pump.

This is shown in Fig. 2. The can is of galvanized iron, and holds 5 gallons. The pump is the same kind as the bucket pump, but is made shorter. It may be entirely removed from the can, and used as a bucket pump if desired. It is the only knapsack having an agitator to keep the solution stirred. The bucket pumps also have this feature. The lever handle may be charged to be used with either hand, and one of the straps being a snap may be passed across the top and hooked, forming a bail to carry the can. As regularly sent out, it includes Bordeaux nozzle on 2 feet of pipe extension and 4 feet of 1/2-inch hose; can be substituted for other tank at \$3.00 extra. Vermorel nozzle substituted at same price, if so ordered.

Fountain Sprayer. Fig. 4 shows this valuable instrument, and its manner of use is shown in Fig. 5. The most convenient implement for potato-vines and small shrubs. The can is oval in shape, made of galvanized iron, and holds 5 gallons. It may be used with either one or two tubes with bulbs and rose. Price, with one tube as shown, \$3.00. Extra tube bulb and rose, \$1.00.

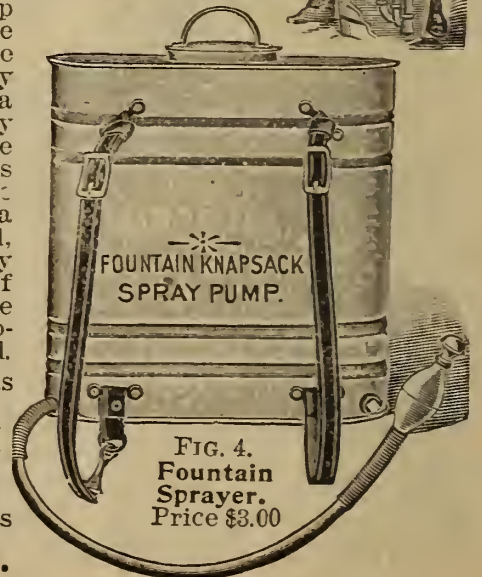


FIG. 4. Fountain Sprayer. Price \$3.00.

FIG. 1. 8 foot pipe extension as shown in Fig. 6, 1. each with Figs. 1, 2, 3, 30c extra.

FIG. 3. Moherman Pump. Price \$2.40.

FIG. 5. Fountain Sprayer. \$3.00.

The A. I. Root Co., Medina, O.

Myer's Barrel Spray-Pump.

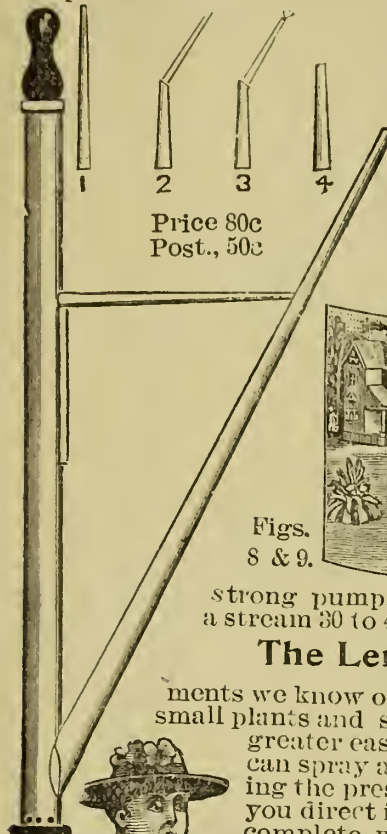
Where you have a larger amount of spraying to do, you can accomplish it more easily with an outfit of this kind. It has submerged cylinder, is double-acting, has patent expansion rubber bucket, has a large air-chamber to cushion the spray, is provided with TWO DISCHARGE PORTS, one or both of which can be used for spraying. It has steel pins, brass plunger cylinder, and brass-lined lower cylinder, good leverage, is very powerful, and easy to operate, will throw a spray as fine as mist over any ordinary fruit-tree, and will throw a solid stream 60 feet from the point of the nozzle.

This can be mounted either on the side or end of a common barrel. The barrel may be mounted on wheels; or, if you have a horse to spare, it can be drawn around under the trees in a wagon or on a stone-boat. This outfit includes Vermorel nozzle, and the pipe extension can also be used, if needed, for high trees. We can furnish the outfit, as shown, without the barrel, consisting of pump with three feet of suction pipe, strainer, and agitator, 5 feet of rubber hose and vermorel nozzle, with extra tip, for \$6.00; or the same with two 5-foot lengths of hose and two nozzles, for \$7.00; 8-foot extension, at 30 cents extra.

Price
\$6.00.

With 2
Hose,
\$7.00.

FIG. 7.



Price 80c
Post., 50c

Figs.
8 & 9.

strong pump, made of tin, with wood plunger, and will throw a stream 30 to 40 feet high. Price 80 cents; 12 for \$8.00; 24, \$15.00.

The Lenox Sprayer.

In Fig. 11 we show one of the most convenient implements we know of for applying poisons to potato-vines and other small plants and shrubs. With this the work can be done with greater ease and speed than you would think possible. You can spray as fast as you walk. No waste, because by releasing the pressure of the thumb the spray stops instantly till you direct it toward the next vine. Price of Lenox Sprayer, complete, with tank to hold 22 quarts, \$2.50. The sprinkler rose with bulb and hose, no tank, \$1.00. Postage 15 cents.

Common-Sense Spray-Pump.

The adjoining cut shows its construction and manner of working. The piston, or plunger, is worked with a lever handle, giving greater force for the same power exerted. The plunger-tube is shorter, and larger in diameter, than the ordinary pump. If the water comes over the top it spills right into the pail again. It has an air-chamber, with valve, giving a continuous stream or spray. It has a short rubber hose to give direction to the stream or spray, without moving the pump. It has also an adjustable nozzle for stream or spray. We are able to offer them for only 50 cents each, or 90 cents postpaid. In quantities the price will be \$5.00 per doz.

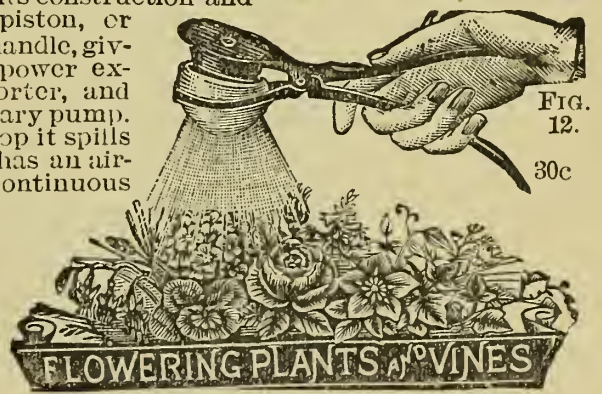
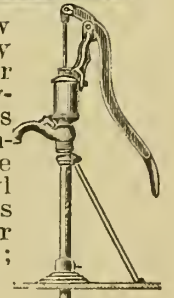


FIG.
12.

30c

The Lenox Atomizer.

In Figs. 12 and 13 we show the Lenox Atomizer, a very hand implement for various uses. For sprinkling clothes, or watering plants in the window, you use pure water. For applying poisons, you use any of the solutions of London purple, Paris green, hellebore, pyrethrum, according to the insects to be banished. For convenience you want an extra rubber ball for the poisons. It uses the liquids with such economy that a pint bowl of solution may be made to go over a very large surface. It is recommended for bugs and insects on carpets, furs or clothes. For this purpose a carbolic-acid solution is used. Price 30 cents each; postage 10 cents. Extra rubber balls, 10 cents.



Pitcher Spout Pump.

This is used chiefly as an inside cistern pump. It may be set with sink and connected with cistern outside, and heated water. Price as shown, to connect with...

Our Leader Pump.

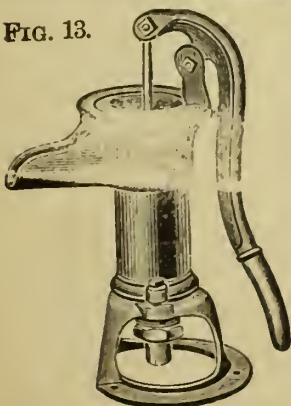
usually sold for... Can be used in cisterns and wells to a depth of 20 to 25 feet by adding more tubing. For deeper wells the cylinder should be set lower, and plunger-rod lengthened to correspond. Price \$3.75. Extra tubing, 1 1/2-in. plain, 9c per foot; galvanized, 12c per foot. Plunger-rod, 3c per foot; couplings, 3 cents each.

The A. I. Root Co., Medina, O.

Fig. 10. 50 cents.
Postage 40 cts.



FIG. 13.



Lenox Sprayer, \$2.50.
Without tank, \$1.00.

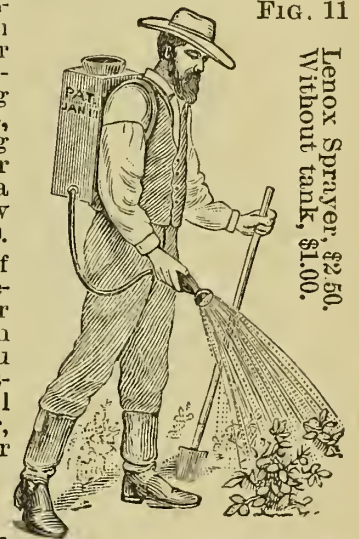


FIG. 11

FIG. 1

HOW AND WHEN TO SPRAY.

PLANT.	First Application.	Second Application.	Third Application.	Fourth Application.	Fifth Application.
Apple —(Canker worm, codling moth, bud moth, scab).	Spray before buds start, using copper sulphate solution.	After the blossoms have formed, but before they open, Bordeaux and Paris green.*	Within a week after blossoms have fallen, Bordeaux and Paris green.	10 to 14 days later, repeat.	10 to 14 days later, Bordeaux, or weak copper sulphate.
Bean —(Anthracnose).	When blossoms appear, spray with Bordeaux.	10 days later, repeat.	10 to 14 days later, weak copper sulphate solution.	Repeat last, if necessary.	
Cabbage —(Worms, aphids).	When worms first appear, kerosene emulsion, or Paris green.	If worms or aphides are present, repeat if plants are not heading, using emulsion for aphids.	If aphides persist, or if worms reappear, use kerosene emulsion, if plants are not heading.	After heads form, use saltpetre for worms, a teaspoonful to a gallon of water, emulsion for aphides.	Repeat, if necessary.
Carnation —(Rust and other fungous diseases).	When planted out, dip in Bordeaux.	7 to 12 days later, spray plants with Bordeaux.	Repeat at intervals of a week or ten days until blossoms open.	While in bloom spray every week with the dilute copper sulphate solution.	
Cherry —(Rot, aphid, curculio and slug).	Before buds start, use copper sulphate solution. For aphid, kerosene emulsion.	When fruit has set, Bordeaux and Paris green.*	10 to 12 days later, if signs of rot appear, repeat.	10 to 12 days later, copper sulphate solution, weak.	Repeat, if necessary.
Currant —(Worms, mildew).	As soon as worms are seen Paris green.	If they reappear, repeat, adding Bordeaux for mildew.†	If worms still trouble, pyrethrum or bellebore.†		
Gooseberry —(Mildew, worms).	As leaves open, Bordeaux and Paris green.	In 10 to 14 days, repeat with both.	10 to 14 days later, sulphide of potassium on English varieties.	10 to 14 days later, repeat if necessary.	If mildew persists after crop is gathered, Bordeaux.
Grape —(Flea-beetle, fungous diseases).	Before buds burst, copper sulphate solution and Paris green.	When first leaves are half grown, Bordeaux and Paris green.	As soon as fruit has set, repeat.*	10 to 14 days later, Bordeaux mixture, if disease is present.	If necessary, very weak copper sulphate solution.
Nursery Stock —(Fungous diseases).	When buds burst, Bordeaux.	Repeat at intervals	of 10 to 14 days.		
Peach, Apricot —(Leaf-rot, curculio, mildew and rot).	Before buds swell, copper sulphate solution.	As soon as fruit has set, Bordeaux and Paris green.*	10 to 12 days later, repeat.	10 to 12 days later, repeat.	If rot persists, use very weak copper sulphate solution every 5 to 7 days.†
Pear —(Leaf-blight, scab, psylla and codling moth).	Before buds start, copper sulphate solution.	Within a week after blossoms fall, Bordeaux and Paris green.	10 to 12 days later, repeat.	10 to 16 days later, Bordeaux.	10 to 16 days later, Bordeaux.†
Plum —(Black knot, rot and all fungous diseases, curculio).	As buds start, copper sulphate solution. Cut out knot and burr.	When fruit has set, Bordeaux and Paris green.*	10 to 12 days later, repeat.	10 to 20 days later, Bordeaux.	Weak copper sulphate solution, as is necessary.
Potato —(Beetles, scab, blight).	For scab, soak seed in corrosive sublimate solution (2 oz. in 16 gallons of water for 90 minutes).	When beetles or their larvae appear, Paris green (1 pound to 100 pounds of plaster).	Repeat, whenever necessary.	When blight of the leaves is accompanied by rot of the tubers, Bordeaux.	Repeat, if necessary.
Quince —(Leaf and fruit spot, rot).	Before buds start, copper sulphate solution.	When fruit has set, Bordeaux and Paris green.*	10 to 12 days later, repeat.	10 to 20 days later, Bordeaux.	Bordeaux or copper sulphate solution, as is necessary.
Raspberry, Blackberry —(Anthracnose, rust).	Cut out badly diseased canes. Spray with copper sulphate solution before growth starts.	When new canes are one foot high, spray with Bordeaux mixture.	10 to 14 days later, weak copper sulphate solution.	When crop is gathered, remove old canes, thin new ones and spray with Bordeaux mixture.	Special Notes. For BLACK KNOT on cherries and plums, cut out and destroy by burning the diseased parts as soon as discovered. For APHIS on all plants use kerosene emulsion. If RED RUST appears the entire stools affected should be cut out and burned. YOUNG PLANTS should be sprayed with Bordeaux mixture at the time of the first and third applications to bearing plants.
Rose —(Mildew, black spot, red spider, aphid).	Mildew: Keep heating pipes painted with equal parts lime and sulphur mixed with water to a paste.	Black spot: Spray plants once a week with weak copper sulphate.	Red spider: Kerosene emulsion to under side of foliage.	Aphid: Kerosene emulsion.	
Strawberry —(Rust).	Just before blossoms open, Bordeaux and Paris green.	When fruit has set, Bordeaux* or weak copper sulphate solution.	As soon as berries are harvested, Bordeaux (if to be kept longer).		
Tomato —(Rot and blight, worms).	When first fruits have set, Bordeaux.	If disease appears, repeat* or use weak copper sulphate solution.	If necessary, spray with weak copper sulphate solution.		
Violet —(Blight, red spider).	When blight is first seen, weak copper sulphate, Kerosene emulsion for insects.	Repeat at intervals of 10 to 20 days, as necessary for blight.	NOTE.—Use kerosene emulsion, very weak.		

EXPLANATION.—Whenever an asterisk (*) is used it cautions against spraying with poisons while the plants are in blossom; a dagger (†) indicates that there is danger of making an application within three weeks of the time the fruit is to be used as food. While the number of applications recommended will be found desirable in seasons when the fungi are particularly troublesome, a smaller number may often suffice.

FUNGICIDES.

COPPER SULPHATE SOLUTION.

Copper Sulphate.....1 lb.
Water.....25 gals.

For use *only before the buds open*. It is ready for use as soon as dissolved in water.

BORDEAUX MIXTURE.

Copper sulphate.....4 lbs.
Quick lime.....4 "
Paris green (for leaf-eating insects).....4 "
Water (1 barrel).....40-50 galls.

To prevent potato rot, 6 lbs. of copper sulphate is used instead of four.

AMMONIACAL COPPER CARBONATE.

Copper carbonate.....5 oz.
Ammonia.....2 qts.

Water (1 barrel).....40-50 gals.

For use late in the season when Bordeaux mixture may stain the fruit. It is also best adapted for green-house spraying.

INSECTICIDES.

KEROSENE EMULSION.

Kerosene (coal oil).....2 gals.
Rau water.....1 "
Soap.....½ lb.

To be diluted before use with 9 parts of water. For sucking insects.

PARIS GREEN AND WATER.

Paris green.....1 lb.
Lime (fresh).....1 "
Water.....200 gals.

For insects which eat foliage.

See description of Best Spray Pump, previous page.