

conclusively
e functioning
development of
that definite
most econom-
mineral salts
A. J. L.

cting

by catarrh,
during the
weather in
which are not
in particular
to another,
majority of
carrh is non-
ds and this
l and drafts
ng, vigorous
in the in-
administered
t more fatal
be removed
n water used
two-per-cent
ic acid may
s and eyes,
membranes
achaea. The
ost poultry-
ness in the
nasal open-
ne thick and
ome swollen
neezes in an
ir passages.
their heads
es not kill
g duration.
appear bet-
it is claimed
ber of years
to bring
t nearly so
he fall and
the disease
Surface and
The disease
In intro-
uninfected
which have
ks, to make
e. Exclude
all animals
not use im-
d premises,
well nour-
and roomy
into the
any birds
and houses
um perman-
all birds that
he eyes and
ully washed
ion such as
chamomile
rosive sub-
e of one to
has given
een thumb
This helps
bird's head
nganate for
eers occur on
cheesy mat-
ne touched
d patience,
to prevent
have half
this disease
h in price.
be obtained.
birds sickly
e time.

RE.

sh in mind,
experience
crop may
ways count
y, it never
and what
hile to be
have rotted
to conserve
is whether
dig out the
d catalogue
on my own
anted three
otatoes; in

No. 2, three small, uncut potatoes, and in No. 3, three cuts of good-sized potatoes. I took particular pains in mellowing the soil so that the eye sets might have a fair start, but the yield was only about one-quarter of that from the planting of the little, cut tubers, and the latter was ten per cent. less than that from the planting of first-class cuts. The potatoes from the seed eyes in size, ranged from medium to small, and the small seed gave a far larger proportion of small potatoes than what was dug from the seed cuts of the good tubers. If one has nothing else left but eyes they may be used, but the trouble is that they receive a very poor start in life compared with the eye bedded in a slice of a full-grown potato. Like produces like in potatoes.

Strawberry Mulch.—In mulching strawberry or other plants for winter, make sure that it is free from weed seeds. I once tried some old hay and got a dose of twitch grass for my pains, and another time a growth of timothy from a wheat-straw litter. A light dressing of stable manure rotted down so that weed seeds have perished I have found a good dressing for winter.

The Mulberry.—In making a list of fruit trees for planting next spring include a mulberry or two. Our large tree was in bearing this season from July until October, making pies and preserves galore. The fruit resembles a large thimbleberry but is less seedy. Its sweetish flavor makes it fine to mix with fruits of a more distinct or acid tang. It is a steady and prolific yielder for over two months. It requires care in picking, as it falls easily and should be headed down to a reasonable height. Our old tree had run up to about thirty feet high with sprawling limbs, but by drastic surgery the three main trunks were cut down to about fifteen feet high, and, throwing out fresh shoots freely, made a better tree and a better fruit bearer. It stands hard usage well and is popular with the birds. Try it.

Onion Growing Trial.—The best results this season in onions were with Prize Taker variety, started from seed in a hot-bed and transplanted to open rows on May 28, but the Yellow Globe Danvers seed sown in open rows on May 13 were a close second in size and quality of bulbs grown.

Sweet Corn.—It is not easy to beat Golden Bantam corn for table quality, but it is hardly "filling" enough to be popular with boardinghousekeepers in war ration times. After several years' hunting I found this season that Golden Nugget about fills the bill. It grows a larger and more vigorous stalk that carries a much more generous ear, larger and of a diameter better designed to fill a No. 10 mouth. And best of all, the strain tried preserved the peculiar sweet, tender and juicy quality of our old friend, Golden Bantam. This was an off year for maturing corn and the Golden Nugget did not ripen quite as early as its competitor, which one might expect from its habit of growth. It has a handsome, orange kernel, and the ears were used on into October. The planting of this sort was on June 4.

Some Beans.—Another good thing tried out was the Kentucky Wonder, yellow podded, pale bean, delicious as any snap, wax variety and stringless. Many of the pods were seven and eight inches long, very thick and meaty, and I counted over one hundred pods on a pole at one time. Somebody may tell you that the green podded Kentucky Wonder is the same or "just as good." Don't believe him. With me, it was not as early, not as prolific, nor of as fine quality. For an early, low bush bean Michigan Golden Wax is a capital sort, but Hudson Wax proved a heavier and longer bearer. Wardwell's Wax was most subject to blight. If you are lucky enough now to have some ripened beans take good care of them for seed. An early frost slaughtered so many acres of Western Ontario beans.

Winter Care of Celery.—One of the last fall jobs is to store the celery for winter use. This was a good season for this choice esculent in an upland, clay-loam farm garden. Paris Golden for early and Giant Pascal for late, both did well. I leave them out as long as possible and until sleet and hard frosts threaten. Packed in moist sand in a cool quarter of the home cellar in rows with inch boards between, the Giant Pascal kept right on until May in sweet, nutty condition last season. By the way, Hubbard squash are a troublesome vegetable to keep from spoiling with a moldy rot in early winter. The main point seems to be to keep them in a dry place, fairly cool and not touching each other.

Tomato Patch Study.—As might be expected with a plant of semi-tropical origin, the summer of 1917 was a disheartener for many reputable varieties of tomatoes. Most of the twelve sorts under trial developed loads of good-sized fruit, but there was not sunshine and heat enough to ripen half of them. The late-maturing varieties like Stone, Trucker's Favorite and Ponderoso were severely left behind. The last-named and the New Monarch, said to be an improved Ponderoso, are very large, prolific and, as a rule, irregularly shaped tomatoes, but the New Monarch surpassed anything in the garden in meatiness, freedom from seeds and cavities and in mildness of flavor. The bane of many hand-somer kinds is their excessive acidity for eating sliced and canning. Those named were prolific, the Stone giving the heaviest yield of uniformly, large, smooth and perfectly-shaped fruits, but nearly all of them remained green. After four years' trial with seed from American and Canadian sources, the Earliana classed itself as the poorest apology for a tomato. The earliest ripening was Livingstone's New Manifold, a good-yielding, smooth sort, of medium size which will doubtless improve in type by culture. For a combination of size, yield, earliness and other desirable qualities, Chalk's Early Jewel, Bonny Best and Italian, a scarlet home-developed "sport" outclassed all the others, and with the Stone are set down as the main reliance for the next seeding, with a smooth selection of the New

Monarch sort for home table use. One specially desirable feature of the kinds named is that they have plenty of vine and foliage necessary to sustain and protect a load of good fruit through drought and frosts. Professional improvers should keep this in view and also the improvement of tomato flavor, which cultivated tastes will more and more demand.

Hot-bed Soil.—On the first available fine day before winter comes, those who start planning now for a good garden in 1918 should get up a big load of swamp mould and dump it where the hot-bed will stand, because frost and floods may prevent securing it in spring when wanted.

Pests.—Barring the green cabbage worm, which slacked lime and hellebore kept in check, insect pests were not troublesome during the past season and, for the encouragement of beginners, weeds were less troublesome in the writer's 1917 garden than ever before, for the simple reason that they have not been allowed to run to seed and only rotted manure, plowed down in the fall, was used on the plot.

Middlesex Co., Ont.

ALPHA.

Yields of Apple Trees at Different Ages.

The question often arises in the mind of the orchardist as to whether he should set all standard varieties of apples and wait several years for returns, or use other kinds, the fruit of which is not so desirable but is borne by the tree at an early age. Some have compromised and set standards and fillers, while yet others have planted such kinds as Duchess and Wealthy in blocks as close together as one rod to 18 feet apart both ways. In one case they expect almost immediate but moderate annual returns, while those who cling to the standard varieties are content to wait for a number of years in anticipation of a product that will bring a higher price and is easier to handle and dispose of. It has never been decided definitely by experiment which is the more profitable, to plant a Duchess tree and begin to harvest fruit in the third year or plant a Spy and wait a dozen years or more for it to begin to bear. By profitable we mean considering the total returns over a period of 20 or 25 years. We have used these two varieties as an illustration only; the same might be done with several important varieties of apples. The outcome of any such experiment, on the other hand, might tend to prove incorrect any statement made, no matter how conclusive the test proved to be. For instance, let it be found that Duchess, Wealthy or any other early-bearing variety would pay more handsomely during the first 20 or 25 years after setting than Spy, Baldwin, Greening and several of the standard kinds, and the setting of that type would become so extensive that the demand would not consume them at remunerative prices. The Spy-Baldwin-Greening class would then prove better payers and the experiment would have been vain. At the Central Experimental Farm, Ottawa, records have been kept for a period of 18 consecutive years, and much useful information is available as a result. However, several standard kinds are not hardy at Ottawa and are consequently absent from the report. If experiment stations could see into the future and outline work that would benefit someone in years to come they would add very materially to their usefulness. "Hand to mouth" experimenting and thinking always of the Annual Report is one reason that our horticultural stations are not accomplishing as much as they should. A chart prepared by the Dominion Horticulturist showing the annual yield of a great number of varieties for a long period, is the only thing of its kind that has come to our attention. Unfortunately the Spy, Greening, King, etc., are not listed, for reasons already given, but Mr. Macoun's comments on several early-bearing kinds are interesting. They are reproduced in the following paragraphs:

"It has been found that the McIntosh apple comes into bearing the sixth year after planting at Ottawa. In that year a tree has borne about two eleven-quart baskets of fruit, and by the eighth year nearly a barrel of fruit is borne on a tree. By the tenth year a barrel and a half; by the twelfth year three barrels; the fifteenth year four and a half barrels; the nineteenth year seven and a half barrels; the twenty-first year seven barrels; the twenty-third year six barrels, and the twenty-fourth year four and three-quarter barrels, or an average during the past two years (1913, 1914) of nearly five and a half barrels a year. Taking the average per year for nineteen years during which it has been in bearing, we find the average yield per year from one tree has been about two and three-quarter barrels. It would look as if one might safely count on two barrels a tree.

"The Duchess of Oldenburg apple is one of the most reliable and productive varieties. It begins bearing the third year after planting, and by the sixth year the trees will bear nearly a barrel apiece, by the eighth year two barrels, and by the tenth year three barrels; by the eleventh year more than four barrels, and the maximum crop so far has been reached in the twenty-fourth year when a yield of over eight barrels was obtained from one tree. One tree bore the following crops in thirteen years, beginning with the eleventh year: 2½, 2, 3¼, 3, 4½, 3, 4, 2, 4½, 4, 6, 2, 5½ barrels. Other trees bear a heavy crop every other year. The average yield per tree from the third year to the twenty-sixth is about two barrels per tree, and from the tenth year to the twenty-sixth, three barrels.

"The Wealthy is one of the earliest and most productive bearers, but it does not become a large tree, and the maximum crops have not been as large as some other varieties. It begins bearing the second or third year after planting. One tree gave as much as nine gallons

of fruit the third year, but as a rule there are only a few apples the second and third years, and most trees do not give more than from three to five gallons the fourth year. The fifth year there is about half a barrel to a tree, although there has been over a barrel on one tree. By the seventh year the trees will be bearing a barrel or over, and by the eighth year there has been as high as two barrels on a tree. By the eleventh year some trees will bear two and a half barrels, and by the thirteenth and fourteenth years from three to four barrels. The highest yield obtained from a Wealthy in one year was 5¾ barrels in the twenty-fourth year. The average yield per year from the third to the twenty-sixth year is about a barrel and a half. This is a low average compared with some other varieties but the Wealthy is a small tree and as a rule bears heavily one year and has a light crop the next which brings down the average. But from the twentieth to the twenty-sixth year the average is two and three-quarter barrels a tree."

FARM BULLETIN.

Results With Root Seed Growing in Canada.

Among the problems that the great war has created for Canada, that of growing root seed, i. e. seed of swede and fall turnips, mangels, and field carrots, may seem rather insignificant to the average Canadian citizen. Yet, this problem is to-day one of the most vital to the Canadian farmer. In 1916, Canada imported a total of 1,927,313 pounds of turnip seed, 1,056,060 pounds of mangel and beet seed. In 1916, the import of turnip seed dwindled to 150,855 pounds and the import of mangel and beet seed to 636,797 pounds. In 1917 the figures stand at 291,379 pounds for turnip seed and 891,677 for mangel and beet seed. That Canada was running a great risk of having her supply of root seed from Europe shut off, partly or wholly, as a result of the war, was predicted in an Experimental Farms bulletin entitled "Growing Field Root, Vegetable and Flower Seeds in Canada", issued early in 1915. The bulletin also predicted "that many districts of Canada where root seed growing is unknown at present, will prove themselves not only able to produce seed of good quality, but also to be especially well adapted to seed raising". To what extent this prediction was justified, is shown by the data following: In 1915 the Central Experimental Farm at Ottawa produced first-class mangel seed at the rate of about 1,150 pounds to the acre. Mangel seed was produced at the Experimental Farm at Agassiz, B. C. at the rate of 2,100 pounds per acre, at the Experimental Station at Lennoxville, Que., at the rate of 1,150 pounds per acre and at the Experimental Station at Kentville, N. S., at the rate of 2,100 pounds per acre. The same year the Experimental Station at Lennoxville, Que., raised turnip seed at the rate of close to 1,250 pounds to the acre.

But what about the profit? Does it pay the grower to raise that kind of crop? As an answer, it may be stated that there was, according to records kept, a net profit of about \$80 per acre from the mangel seed crop at the Experimental Farm, Ottawa, in 1915. And this in spite of the fact that the men handling the crop were quite unfamiliar with the same. The above figures indicate, most decidedly, that there are, in Canada great opportunities for developing a new field in agricultural activity promising substantial rewards, from a profit standpoint, to those who take up root seed growing conscientiously and in a business-like manner. May it also be added that the raising, in Canada, of the seed needed in the country will directly help to increase the average yield of the root crops of the Dominion.

EXPERIMENTAL FARMS NOTE.

Distribution of Seed Grain and Potatoes.

By instructions from the Hon. Minister of Agriculture a free distribution of superior sorts of grain and potatoes will be made during the coming winter and spring to Canadian farmers. The samples of grain for distribution will consist of spring wheat (about 5 lbs.), white oats (about 4 lbs.), barley (about 5 lbs.), and field peas (about 5 lbs.). These will be sent out from the Central Experimental Farm, Ottawa, by the Dominion Cerealists, who will furnish the necessary application forms. A distribution of potatoes in samples of about 3 lbs. will be carried on from most of the experimental farms, the Central Farm supplying only the Province of Ontario.

All samples will be sent free by mail. Only one sample of grain (and one of potatoes) can be sent to each applicant. As the supply of seed is limited, farmers are advised to apply early.

J. H. GRISDALE,
Director, Dominion Experimental Farms.

According to the Census and Statistics Office, the total yield of wheat for Canada is now provisionally estimated at 231,730,200 bushels, the average yield per acre being 15¾ bushels, as compared with 16¾ bushels reported a month ago, and with 17 bushels the yield of 1916. Of oats the total yield is 393,570,000 bushels, as compared with 410,211,000 bushels in 1916, the average yield per acre being 29½ bushels in 1917 as compared with 37.30 bushels in 1916. Barley yields 51,684,000 bushels, as compared with 42,770,000 bushels in 1916, the average per acre being 21½ bushels as compared with 23.72 bushels in 1916. The yield of rye is 4,239,800 bushels, which is slightly more than the quantity returned a month ago.