

five mature cows averaged \$228.57; eleven two-year-olds averaged \$175, and the three males averaged over \$200. Following is a list of the animals selling for \$100 and over, together with the names and addresses of their purchasers:

Smithdale Maggie Juliet, R. H. Shaver, Brantford.....	\$165
Smithdale Bessie Posch, Jno. F. Lampkin, Brantford.....	125
Smithdale Pontiac Valentine, F. E. Heximer, Niagara Falls.....	190
Smithdale Segis Pontiac, J. B. Stevenson, Burford.....	130
Smithdale Beauty Queen, Jas. Knight, Brantford.....	175
Smithdale Jane Segis, J. H. Nevills, Wellandport.....	185
Smithdale Segis Wayne, Fred Mitchell, Brantford.....	130
Smithdale Acme Wayne, C. Force, Brantford.....	150
Daisy Faforit De Kol, G. W. Mitchell, Sherkston.....	205
Queen Posch Diotime, Clarence Smith, Ancaster.....	270
Faforit Kent De Kol, A. H. Cressman, Blair.....	165
Grace Posch, W. H. Hurd, Cainsville.....	390
Rose Faforit Abbecker, H. Herd, Onondaga.....	375
Madeline Beauty Posch, C. E. Smith, Scotland.....	395
Maggie Kent, G. E. Van Valkenburg, Brantford.....	210
Braeside Segis Baroness, A. H. Cressman.....	230
Katie Korndyke Segis, J. S. Whaley, Caledonia.....	185
Beauty Korndyke Segis, H. Anderson, Caledonia.....	175
Lady Hartog Pietertje, H. Chapin, Brantford.....	150
Kate Castleton Hartog, J. C. Brown, Stamford.....	320
Tidy Abbecker Mercena Scott, J. E. Brethour.....	
Burford.....	280
Johanna Celestia Scott, Oak Park Farm, Paris.....	330
Johanna Celestia Scott 2nd, E. Plant, Burford.....	170
Fairview Maud, G. W. Michael.....	140
Pasma Abbecker 2nd, F. A. Ficht, Curries.....	170
Dainty Perfection Korndyke, Frank E. Heximer.....	230
Hazel Bell, Oswald Ebert, Cayuga.....	240
Sarcastic Lady Schuiling, A. Merryweather, Bridgeburg.....	200
Lady Schuiling 4th, E. Plant.....	230
Malone Hiemke Banks, G. E. Van Valkenburg.....	200
Queen Schuiling De Kol, Jas. G. Currie, Ingersoll.....	220
Grace Fayne Canary, David E. Butler, Scotland.....	155
Rockford Lady, D. Wilson, Brantford.....	155
Ida Mercena Bonheur, Walter G. Ash, Mohawk.....	165
Tidy Calamity Johanna, Jno. F. Nelles, Caledonia.....	405
Tinie Grant 3rd, J. E. Brethour.....	250
Jewel Monarch, G. E. Van Valkenburg.....	220
Schuiling Jewel, Wm. Merryweather.....	220
Schuiling Eugenie, D. T. Thompson, Cainsville.....	140
Canary Mercedes Daisy, Jno. F. Lampkin.....	155
Molly Pontiac, W. D. Burch, Brantford.....	220
Mary Smith, E. Plant.....	230
Lady Patricia Korndyke, E. Plant.....	245
Smithdale Schuiling Arcano, F. A. Ficht.....	195
Lady Tryntje Butter Girl, Wilson Bros., Hamilton.....	235
Schuiling Mercedes, Fred Plant, Brantford.....	205

Males.

Sir Patsy Hartog, B. Mason, Cainsville.....	215
Norman Posch, J. Biggar, Mohawk.....	175
Premier Lyons De Kol, G. W. Michael.....	225

A New Record Cow for Canada.

Rolo Mercena De Kol, a three-year-old Holstein heifer, sired by Sir Rolo Banks Mercena, recently completed a seven-day test, making 44.70 lbs. of butter and 735 lbs. milk. Her best day's milking was 116 lbs. This is a new Canadian butter record for a three-year-old. The heifer is owned by J. B. Hanmer, of Norwich. A heifer which will give 116 lbs. of milk in a day, making over 6 lbs. of butter, is a valuable individual to have in a herd.

POULTRY.

Feeding Poultry for Strong Fertility.

EDITOR "THE FARMER'S ADVOCATE":

If one starts early to feed for results along the line of fertility, he should not have so many complaints to make at the hatching season as are sometimes heard. Many people do not secure the results they hope for and are often heard to remark, "Wait till another season and I will have better luck, as I will feed plenty of feed that makes for fertile eggs." If we are to get eggs that are strong in fertility there are certain conditions that must be met, and these conditions should be as near springlike as we can possibly make them.

Begin early to feed plenty of green feed. If you have mangels feed them as they are excellent. A good plan is to have some spikes driven into the wall in handy places, high enough from the floor so the birds have to exert themselves a little in order to reach them. On these hang one-half of a large mangel which is split in two pieces. This gives them some exercise, which is necessary to get good fertility. The fat, lazy hen will be found to be the one that will lay a few eggs, but they are generally lacking in fertility. Then we have the clover and alfalfa for green feeds. In order to get the best results from clover it should be steamed. If a hot mash is fed you may steam some of the clover and mix the mash with it. The birds will do well on this mixture; will lay well in the winter, and in the spring the eggs should be very fertile.

Again, if the dry mash is used, get some meal alfalfa and mix about one-sixth part of it with the ground grains. We must not forget the sprouted oats, which I think is the best of all green feeds, but it is not every farmer who has an oat sprouter or the time to sprout them.

If you are to get fertile eggs don't feed one kind of grain alone, but rather feed as great a variety of grains

as possible, making the birds work for their feed in the morning by having about six inches of dry straw on the floor. It pays to go around amongst the birds after they are on the roost at night and feel the crops of some of them to see if they are full, and if they are not you may feed more the next night. It is well to feed a lighter mixture of grains in the morning, such as barley, oats and feed wheat in equal parts, and at night a heavier mixture such as wheat and corn.

Of course, the male bird has much to do with fertility and should have extra good treatment. Once in a while particularly during the breeding season, he might be put by himself in a small coop and fed some raw beef and given milk to drink. The male bird should always be in the best of condition, for a male bird that is out of sorts is a bad thing to have in a breeding pen.

If the male bird should take sick during the winter and be of such a nature as to make him unfit for breeding work, it is better to take him right out of the pen than to wait, hoping that he may come along all right. He might appear all right, but still not be in proper condition for the best results. A sick bird of either sex should never be allowed in a breeding pen, as it is hard enough to raise chicks that come from good, hardy stock without trying to raise them from sickly birds.

Take good care of your birds early and the results in fertility will, in all probability, be good at hatching time.

Middlesex Co., Ont.

W. A. S.

HORTICULTURE.

The First Ontario Potato Institute.

An institute is not an unknown thing to the Ontario farmer. He has had long experience with Farmer's Institutes and Women's Institutes, and if it so happened that Farmer's Institutes ended their career after a long and protracted attack of sleeping sickness, it does not necessarily follow that everything else which goes by the name of an institute should end in the same manner. At any rate the idea, in a specialized form, is being revived, and it was a privilege accorded to a representative of "The Farmer's Advocate" to attend the first potato institute ever held in the Province. This event was held at Bowesville, in Carleton County, under the guidance of W. D. Jackson, Agricultural Representative of the Ontario Department of Agriculture. Other potato institutes are to be held in various



A Busy Mother.

counties, particularly, of course, those possessing recognized potato districts. They will be held with the full co-operation and encouragement of the Ontario Department of Agriculture through the medium of the Potato Specialist and Advisory Potato Council. It is hoped to create some form of local organization after a short time in each of the potato districts and, once the way seems prepared and the usefulness of such an organization fully demonstrated to the growers, to further organize the potato industry into a provincial potato association.

The potato institute will have a three-fold object; first, to provide the occasion for the potato growers of a district to meet together and exchange experiences in the production of their special crop; second, to afford opportunity for competition in exhibits of commercial potatoes grown locally; and third, to get the growers together so that they may get additional information on the subject of potato growing from men who are regarded as potato experts, in the several phases of this branch of agriculture. The institute at Bowesville was a modest start in this direction, and although the day was not a great deal more promising than the state of the roads, and although a very small crowd was predicted for the afternoon session, the attendance at both afternoon and evening was all that could have been expected, in point of numbers and interest.

Standardization and Methods.

The standardization of potato varieties was discussed by T. G. Raynor, Seed Branch, Department of Agriculture, Ottawa, in his usual practical and vigorous style. The speaker drew attention to the fact that whereas we may be able to market potatoes of good quality, the Ontario crop is variable in size, shape and maturity, so that it cannot command the highest market price, for the reason that it does not cook or keep evenly. Green Mountain and Irish Cobbler were recommended as the two varieties most favorably received on the market, and the ones recommended for Ontario by a special conference of representative potato growers held something over a year ago. Evidently, however, Green Mountain is not the favorite in the Bowesville district, because it does not appear to yield well on high ground, and where the yield is satisfactory the potatoes

are too small. The Dooley was thought to be a heavier yielding variety by some, largely because it does not require so strong a soil. However, Mr. Raynor pointed out that where such sandy soil as is found in that district is met with, plenty of plant food must be added. It was also thought by some that Green Mountain plants do not make as much root and, therefore, cannot stand drouth so well. They appeared to die earlier in 1918 than other varieties. In this connection it was pointed out that Green Mountain seed secured from New Brunswick in 1918 was seriously affected with mosaic disease, which would produce this effect.

"Successful growing," said Mr. Raynor, "depends quite as much upon methods as upon soil and climate. The selection of varieties is of the greatest importance, and the three R's of variety selection, Reproductiveness or yield, Relish, or cooking quality and Robustness or resistance to disease, should always be considered. One can tell fairly well from appearance whether a potato will cook well, because if the centre of a potato split lengthwise shows a large water core the potato will cook out watery, while if the two halves show a tendency to stick when placed together again, plenty of starch is indicated and this means good cooking quality." Sandy loam is probably the best potato soil, according to the speaker, as it never packs hard and yet has sufficient body to produce splendid crops, with plenty of fertilization. "Experience has shown that one man can profitably spend his whole time and that of a team in looking after and cultivating a 20-acre field of potatoes. A good method of soil preparation for a five-acre field where potatoes are not necessarily a principal crop is to plow down clover sod about the middle of May, after putting on about 20 tons of raw stable manure per acre. The sets can be planted 12 to 14 inches apart in every third furrow. For the regular commercial grower it is better to have potatoes in a three or four-year rotation, following potatoes with grain seeded down to clover, or clover and timothy, depending on whether the rotation covers three or four years. Stable manure should preferably be applied in the fall or with the previous crop if possible to lessen the chances of scab; and when land is plowed in the fall it should be plowed from seven to nine inches deep."

Large-sized tubers produce larger yields than small ones, and this also applies to the size of the pieces used, which should weigh from one ounce to two and a half ounces. Small tubers have been shown by experiments to decrease the yield. Potatoes should be planted from 12 to 14 inches apart in the row, and this should require from 18 to 20 bushels to plant an acre. A potato crop

requires a very great deal of moisture, as much as 650 tons for a crop of 200 bushels per acre, or 450 tons for each ton of dry weight produced. Hence, there is a necessity for incessant scuffling which should not stop necessarily with the blossoming period if the weather is very dry, but should become shallower as the plants grow bigger. "Generally speaking, moulding is not necessary unless surface drainage is required," said the speaker, but several growers pointed out that a digger cannot be used unless there is sufficient moulding of the soil to bring the potatoes part way up on the digger; otherwise they will fall back. Experiments were suggested by one grower to determine whether or not the plants would spread sufficiently when not moulded to scatter the tubers and lose part of the crop if dug with a digger.

Fertilization.

H. G. Bell, discussed potato fertilizers and fertilizing, emphasizing first the fundamental importance of water in the plant to transport food materials. The root systems of potato plants develop very quickly, according to Mr. Bell, and within 30 days after planting the tiny rootlets may cross the space between the rows. Lime is a necessary constituent in soils to sweeten them, because all soils that will grow and do grow good crops tend to become sour. Nitrogen is necessary for stalk and leaf growth, while phosphoric acid is necessary for seed production and to secure quality and maturity. Potash gives strength to the plant.

Potatoes require a great deal of plant food, and in the State of Maine some growers apply as much as from 1,500 to 2,400 pounds of high-grade commercial fertilizers per acre. To show the relative amounts and kinds of plant food required by different classes of plants the following table was given:

Plant Food Required.			
Crop	Nitrogen	Phosphoric Acid	Potash
Hay	Abundance	Fair	Fair
Grain	Fair	Abundance	Fair
Roots	Good	Fair	Abundance

The lizers and come from dissolved plant, and moisture should be planted.

A. H. Department machinery that vegetables grower, to manure, 8 pounds of per acre priced, ve it pays be Lennan, w digger, lar

Justus extension v in potato said, to a are the pro and its s Ontario wi are not uni great fluct well as wis potato dist graded sto Brunswick bag more graded an outlet for t even our Provinces n notwithstanding equal qual industry l several pro undertaken growers in planting, r Demonstrat rural Repre and Irish C follows:

Source of

Southern O Northern O New Bruns

This ye certified sec New Brun parently ite results from Green Mou

Notes

BY L. In a spr trees and b in "The F convenient to u to indicate tures to abbreviat to the hydro re dings are own lime-su Commercial 33 degrees gravity. In the lo "Bordeaux formula mod of hydrated This is don and is very course, exc third weak quantity gi of lime do sometimes with hand many mont room, but if This should

If a fruit good outfi machine. T for a very li of large tree A leaky ou nuisance an spraying in bad conc machine impo important tl at every str were built pressure wi