

man and Llenroc Jemima Pride, with 508.1 and 542.9 lbs. of milk, respectively. S. C. P. Leonora Mechthilde was first in the senior two-year-old class, and K. S. A. C. Pietertje headed the junior two-year-olds, with 431.5 lbs. milk. In the thirty-day test this cow produced 1,684 lbs. milk.

HORTICULTURE.

Unprofitable Varieties of Fruit

One of the biggest questions facing the grower of any kind of fruit in Eastern Canada at the present time is that of proper selection of varieties. There are so many hundreds of varieties of each kind of fruit, and so many different nurserymen who list large numbers of varieties, that the prospective planter is sometimes at a loss to know just which to choose. In apples alone there must be at least, two or three hundred varieties, planted to a greater or less extent in the Province of Ontario alone, although it is true that a list of twenty-five would include nearly all the varieties found in commercial orchards. But it is quite possible that even twenty-five varieties is too long a list for commercial growers in the Province of Ontario. One of the greatest forward steps which the industry could take would be to pare the list down and eliminate every variety which experience in culture and marketing has shown to be of secondary importance.

The Ontario Fruit Growers' Association has, in the past, made attempts to discourage the planting indiscriminately of inferior varieties, but they face a very difficult task, especially since this is only one of many questions of almost equal importance. Nurserymen could do a great deal to discourage the planting of poor varieties if they would omit them from their catalogues. This is exactly what is being done by the Pacific Coast Association of Nurserymen in the United States. A committee was appointed to deal with this problem, and at the sixteenth annual convention of the Association the list given herewith was selected as containing those varieties which should be dropped from catalogues and budding lists and their sale discontinued. Even nurserymen who have been making specialties of certain varieties in the list as urged to discontinue the practice, unless they feel absolutely that the variety is one of merit and is much in demand.

It will be readily acknowledged by anyone acquainted with varieties of fruit that many of these varieties are quite common in Eastern Canada. Now it is certain that varieties which are not successful in the Northwest might very easily be commercially profitable in Eastern Canada, and, in fact, several instances of this occur in these lists. There are, however, a great many varieties found herein that are known to be decidedly unprofitable in Ontario or other parts of Canada, but which are grown here and there in varying quantities. Each fruit grower who has planted or contemplates planting a new orchard, whether it be of apples, pears, cherries, plums or peaches, should very carefully consider the question of variety selection. Some varieties are weak in trunk or root system, others show a great deal of tenderness, while still others adapt themselves to certain soil conditions, or are of very poor quality. These undesirable characteristics are often found combined with some of the very things that are wanted in varieties of high merit, but it is often found that so serious is the drawback occasioned by the fact that a variety is tender to cold in spite of superior quality and flavor in the fruit that it should not be planted. The question is very closely bound up with the future success of the fruit industry, and should be given the most serious consideration by everyone.

Apples.—Akin, Am. Sum. Pearmain, Antonovka, Arkansas Beauty, Autumn Strawberry, Babbitt, Bailey Sweet, Belle de Boskoop, Benton Co. Beauty, Black Ben Davis, Blenheim Orange, Blue Pearmain, British Columbia, Canada Reinette, Coopers Market, Coos River Beauty, Dutch Mignonne, Early Colton, Early Strawberry, English Russet, Fallawater, Fall Jenneeting, Fall Pippin, Gideon, Gloria Mundi, Goal, Golden Sweet, Haas, Hoover, Hub, Nonesuch, Hyde's King, Ideal, Iowa Blush, Isham Sweet, Jersey Sweet, Keswick Codlin, King David, Limber Twig, Longfield, Mann, Okabena, Ontario, Opalescent, Palouse, Patton's Greening, Peck's Pleasant, Peter, Pewaukee, Pryor's Red, Rambo, Rawle's Janet, Red Bellflower, Red Canada, Red Gravenstein, Red Russian, Romanite, Roxbury Russet, Salome, Scott's Winter, Seek-no-further, Senator, Shackelford, Sierra Beauty, Skinner's Seedling, Smith's Cider, Spokane Beauty, Springdale, Stark, St. Lawrence, Stump, Summer Queen, Sutton's Beauty, Swaar, Sweet June, Tetofsky, Twenty Ounce, Vandervere, Walbridge, Waldron Beauty, William's Favorite, Willow Twig, Winterstein, Wismer's Dessert, York Imperial.

Pears.—Bessemianka, Crocker's Bartlett, Dearborn Seedling, Doyenne de Ette, Duch. de Angoulene, Easter Beurre, Garber, Idaho, Kennedy, Koonce, Lawson, Le Conte, Lincoln Coreless, Madeline, Mt. Vernon, Pound Pratt's Seedling, Sou. de Congress, Tonkoveithka, Vermont Beauty, Vicar, Wilder.

Cherries.—Allen, Baldwin, Centennial, Chapman, Deacon, Dyehouse, Gov. Wood, Hoskins, Knights Ey. Blk., Ostheime, Oxheart, Roe, Vladimir, Windsor, Yellow Spanish.

Plums.—America, Apple, Bartlett, Chalco, Chas. Downing, Clyman, Combination, Forest Rose, Gaviota, Hale, Jellico, Moore's Arctic, Pottawattamie, Shipper's Pride, Sultan, Washington, Weaver, Wild Goose.

Peaches.—Amsden, Australian Saucer, Banner, Bokhara, California Cling, Chinese Cling, George 4th, Gillingham, Golden Cling, Greensboro, Henrietta Cling, Imperial, Levy's Lats, Mountain Rose, Newhall, Orange

Cling, Oregon, Prolific, Runyon's Orange, Sneed, Strawberry, Susquehanna, Van Buren, Wager, Wheatland, Wonderful.

POULTRY.

Get Ready for Winter

EDITOR "FARMER'S ADVOCATE":

Now that the winter is close at hand there are many duties which the poultryman must not neglect. Sometimes winter holds off until along towards the New Year and at other times the first of November marks the end of the autumn weather. So it is necessary to be ready for the cold at any time from now on. If the yards have not been cleaned up it is just the time now to go over them and rake up all the rubbish such as sticks, stones, weeds and grass which have accumulated there. It is necessary to keep the yards clean at all times but just at this season it is wise to go over them carefully, thus one gets rid of all decaying matter and keeps the yards clean and free from bad odors.

Of course, all repairs to the buildings have been made. Remember that a small leak in the roof where only a few drops of rain or snow can get through or a small crevice in the side walls, perhaps just a nail hole near the roost will as likely as not be the cause of a cold or case of roup. Dry floors and dry litters are necessary. Dampness of any kind is far from conducive to good health in the fowls. Replace broken glass and put in new cotton where needed in the windows. Do not wait until real freezing weather before you do those things but do them now.

If the buildings are not as warm as they should be, it is a good plan to go over them and cover the interior with a good grade of building paper. This will keep out the wind and make it more free from draughts. Or better still, one can cover the outside of the building with felt ready roofing, which will make an ideal draught-proof house. The ends and west side can thus be covered with the roofing while such covering may not be necessary on the south side.

Weed out all the cull fowl. This is important. Grain is high in price, and one cannot afford to feed grain to those which surely will not be profit producers. Of course we cannot always tell which will be layers but we do know that some of the real late hatched and poorly developed birds which some winter over cannot be profitable. Sell off those that cannot pay, except those which you will want for table use. Better keep a hundred good ones that will be likely to pay than two hundred and have only half or two-thirds of them pay. It is not how many birds but how much profit can be averaged per bird.

Get a good supply of necessary feeds such as oyster shells, grit, charcoal and green feed such as roots, cabbage etc. One can often get cull cabbage and roots in the fall at a small price which will be good for the birds during the stormy days. Get plenty of litter ready, straw, or dry leaves when they can be secured are a very fine litter. Have supplies convenient so when the cold weather gets here one will not need to worry about them. Much of the pleasure and profit of poultry keeping consists in having everything handy.

Chateauquay Co., Que.

J. D. L.

Skim-milk Versus Meat Scrap

A very valuable line of work in connection with the feeding of animals and the diet of human beings has been conducted by Dr. E. V. McCollum, of John Hopkins University, in the United States. Most people are already familiar with the main points which Dr. McCollum seems definitely to have established. He found, for instance, that there seemed to be two unknown substances which he has called Fat Soluble A and Water Soluble B, which are found in milk, eggs and leafy vegetables. Rations with these substances omitted, result in a variety of diseases and ultimate death. It is for this reason that so much stress is laid upon the widespread use of dairy products. It has been found upon investigation with cattle, that among different kinds of grain feeds, such as wheat, corn, and other cereals, all of which are standard stock feeds, some of them if fed exclusively during a gestation period will result in either imperfectly formed or stillborn calves.

Just recently the Poultry Department, at the O. A. C., completed a set of feeding tests with young chicks, designed to see whether in a general way the same conditions obtained with poultry as with dairy cattle. This experiment was more in the nature of a feeler than an authoritative investigation. Certain lots of young chickens were fed for seven weeks on various rations in which beef scrap, milk, cornmeal and shorts, the yolk of eggs, and green feed in the form of alfalfa leaves, finely chopped up, were combined in six or seven different ways so as to feed each of the feeds separately. The different lots certainly showed remarkable differences in growth, and if a test of this kind is any indication whatever, it is certain that beef scrap is no substitute for milk in the ration of growing poultry.

It is interesting, therefore, to come across a set of experiments designed to obtain the feeding value of commercial meat scrap and sour skim-milk in egg production. These experiments were conducted at Purdue University, Indiana, with White Plymouth Rocks. There were thirty pullets in each flock, and the males were changed from pen to pen every few days so as to eliminate any influence on fertility or hatchability from this source. What were called the skim-milk pens were fed a grain ration of 10 pounds of corn, 10 pounds wheat and 5 pounds of oats and a mash of 5 pounds of bran,

5 pounds of shorts and 50 pounds of skim-milk. The meat scraps pen were fed exactly the same ration, except that 3.5 pounds of meat scraps were substituted for 50 pounds skim-milk, since it was estimated that this amount of meat scrap contained the same amount of protein as 50 pounds of skim-milk. With the check pen, no skim-milk or meat scrap was fed. Mangels were used as green feed when the birds were not on range, and the grain was fed so that birds received about one-third of it in the morning and two-thirds in the evening so that the mash could be eaten during the day, the latter and skim-milk being always accessible. The experiment was conducted with both pullets and hens, and the conclusions are given in a condensed form in the following, taken from Bulletin No. 218:

Pullets.

"A Plymouth Rock pullet is an efficient transformer of raw material into a finished product.

"The consumption of feed of the meat scraps pen was 97.63 pounds of feed per fowl at a cost of \$1.69; the no-meat food pen was 83.24 pounds at a cost of \$1.37 and of the skim-milk pen 201.82 pounds at a cost of \$1.79. Of the feed consumed in the latter pen, 115.74 pounds was milk.

"All birds tended to consume a similar amount of grains and mash regardless of whether they were good or poor layers.

"It was the addition of skim-milk or meat scraps to the ration that increased the efficiency of the grain.

"The cost of feeding a Plymouth Rock pullet on a good ration averaged about \$1.75 for the year 1916 but during 1917, this cost increased to nearly \$2.50.

"It cost an average of \$0.155 to produce one dozen eggs in the skim-milk pen, \$0.162 in the meat scraps pen and \$0.275 in the check pen.

"It cost less to feed a pullet when no skim-milk or meat scraps was fed, but it cost more to produce a dozen eggs.

"The amount of dry matter required to produce one pound of eggs in the skim-milk pen was 4.9 pounds; in the meat scraps pen was 5.14 pounds, and in the no-meat-food pen was 9.57 pounds.

"The egg production averaged 140.2 eggs per pullet for the skim-milk pen, 135.9 eggs per pullet for the meat scraps pen, and 61.2 eggs per pullet for the check pen.

"All birds tended to lay the most eggs in or about the month of April whether well or poorly fed; whether good or poor layers.

"The profit over feed in the skim-milk pen was \$1.59; in the meat scraps pen, \$1.62; and in the no-meat-food pen, \$0.05.

"The feeding value of skim-milk for Plymouth Rock pullets was \$1.60 per hundred pounds and of meat scraps \$20.03 per hundred pounds.

"The meat scraps pen produced better fertility but not as good hatching power of eggs as the skim-milk pen.

"Birds received neither skim-milk nor meat scraps produced eggs of the best fertility.

"A Plymouth Rock produces about 27 pounds of manure in a year at night.

"The method of feeding has no influence on the health or mortality of the flock.

Hens.

"Under normal conditions, hens consume about as much food as pullets.

"Hens that were starved for animal protein as pullets, increased their consumption of everything as hens, when fed milk in abundance.

"It cost but slightly less to feed a hen than a pullet.

"When fowls had sufficient animal protein all their lives they normally laid less eggs as hens than as pullets.

"Fowls that did not receive sufficient animal protein as pullets, laid poorly, but when given skim-milk as hens they laid as many, if not more, eggs than pullets normally did.

"A fowl's egg capacity cannot be judged by the number of eggs she laid unless she received a normal ration.

"The no-meat-food pullets moulted early and were in full new feathers by October. When skim-milk was added to their ration in November, they responded quickly by laying more winter eggs as hens than any fowl did as pullets.

"Early moulting indicates poor laying, but it may not indicate poor laying capacity.

"Hens not fed milk as pullets produced more income and profit over feed as hens, than did the milk fed pullets.

"Hens seemed to produce better fertility than pullets, but showed little improvement in hatching power of eggs.

FARM BULLETIN.

Mr. Bailey Goes to England

Mr. C. F. Bailey, Assistant Deputy Minister of Agriculture for Ontario, left recently for England to assist the Dominion Soldiers' Settlement Board in organizing classes in agriculture in Great Britain and France during the demobilization period. Mr. Bailey will accompany Major Ashton, a member of the Board, and will be away for a couple of months. The Board is working in co-operation with the Khaki University overseas and in co-operation with the Provincial Departments of Agriculture and Agricultural Colleges in the different provinces of Canada. A special course of three months has been planned as a preliminary to fit inexperienced or partially experienced men who desire to take up land under the loan system to be administered by the Board.