

on the ground over night, they are much more exposed to the action of frost than if they are not pulled, the leaves in the latter case acting as a protection.

Two species of turnips are grown extensively, Swedes and white or soft turnips, the former on a far larger scale than the latter, owing to their superior keeping qualities. Turnips are very hardy, and will stand considerable frost while in the ground, without serious injury. Harvesting usually commences about October 20th to November 1st, according to the season. As the roots grow rapidly late in the season, they are left as long as possible, and are only lifted immediately before danger of winter sets in. It is always advisable, however, to take them up while the weather is fine, because the work can be done more expeditiously, and the roots go in the cellar or pit in far better condition. Dry weather is needed, because it is necessary that the dirt which clings to the roots is dry, so as to insure it being rattled off during the harvesting. Wet roots carry a lot of dirt into the cellar with them, and this serves to fill up the space which should be found between the individual roots for the circulation of air which is essential to the keeping of the turnips. Never draw wet turnips if it can be avoided.

The pulling of the roots is the hardest part of the work; at least, the part that generally presents most difficulties. Hand-pulling is still practiced by some growers, but, owing to the severity of the work and the scarcity of labor, this method has been largely superseded by the easier and somewhat quicker methods of harrowing, plowing or mattocking. Harrowing is perhaps the method in most general use. This is not usually practiced with the soft turnips, owing to danger of injury, but the Swedes being hard, withstand the bumping around very well; and on a dry day, if the ground is not too damp, the dirt is well shaken off the roots, making a very clean job. Some top a few days before harrowing, and this is good practice, as it allows the tops to wilt, so that they do not give so much trouble in the harrowing process. Where the roots are a good size, the harrow will pull nearly every one of them, but smaller roots present more difficulties. The greatest drawback is in the picking. Some take a hoe and pull the roots into rows before drawing. Some use a heavy, wedge-shaped scraper, with a board across, on which the driver stands, but this is not always a success. Others rake up the tops and draw them off. This takes time, and the best method seems to be topping a few days before pulling. Topping is always done with a sharp hoe. Two or three strokes with the harrow, two crosswise and one lengthwise of the rows, should be enough to pull all the roots, the latter stroke being made, usually, to rattle more dirt off the roots. Some use the plow and turn two rows together. This makes picking a little easier, but it is necessary to give them a stroke with the harrow in order to remove the dirt, much of which would otherwise be carried in with the roots. The mattock is also a very good method, and a man accustomed to its use can pull the roots as fast as another man can top them with the hoe. Two rows are pulled into one, which greatly facilitates picking, and there is no danger of loss from crushing by the wagon wheels. This is a very satisfactory method, and one worthy of more general use.

In hauling, much time can be saved by the use of the slat-bottom dump-box, where the roots are stored in a cellar. Where this is used, it is necessary that the roots be picked over and thrown back from the hole where they are dropped into the cellar, or the dirt which goes in with them will cause them to rot, and much loss in this section of the cellar will follow. This can be done on wet days, even after the roots are all harvested, provided there is plenty of room in the cellar. In fact, all kinds of roots will keep much better, no matter how they are hauled, if they are thrown back from the place where they are dropped into the cellar.

Where it is necessary to pit part or all of the crop, scrape out the pit bottom to a depth of about six inches, and put the roots in a cone-shaped heap in this, cover with straw, and put a light covering of earth over it, about two or three inches, until the cold weather sets in, when the depth of earth covering should be increased to about six or seven inches, or it should be covered with a light layer of horse manure. It is always well to leave openings in the top. This can be done by placing a tile on end at intervals along the top of the pit. It is just as important to keep turnips cool as to keep them warm, and it requires practice to get just the right amount of covering. So much depends on the severity of the winter that no hard-and-fast rule can be laid down for this work. A few roots are a great benefit to the rations of the stock. They serve to promote health and thrift in winter, and take the place of green food; consequently, they should be harvested in good condition, and every effort made to insure their keeping in good condition.

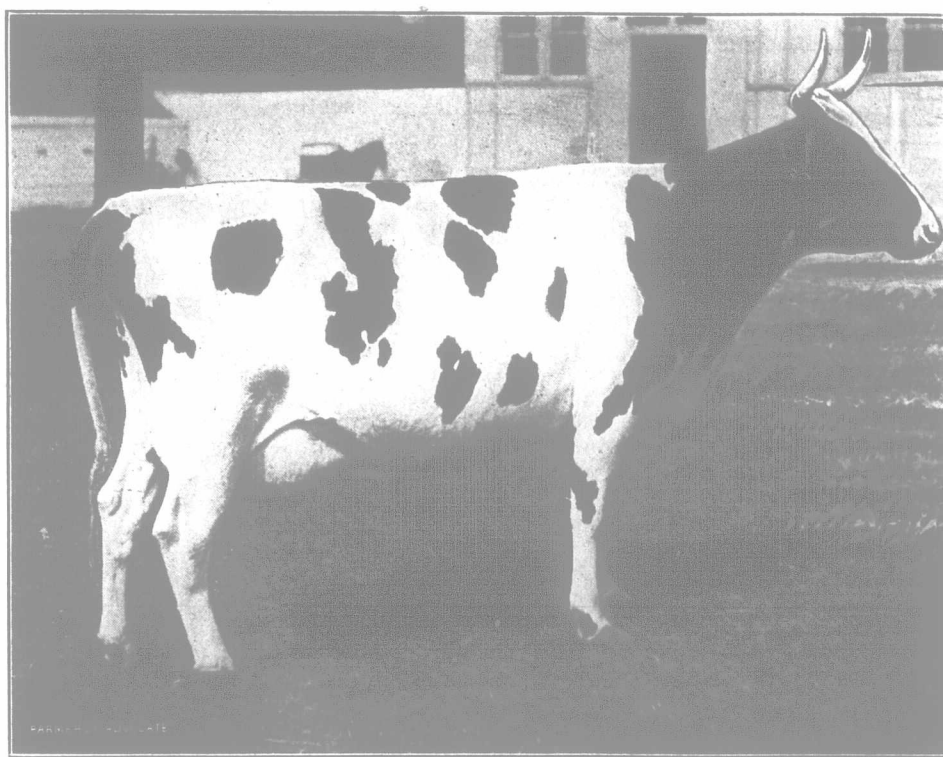
THE DAIRY.

Keep the Milk Record Throughout the Year.

Many cows are far advanced in their period of lactation at this season of the year, and the farther advanced they are, the less milk they give. The quantity given at a milking becomes smaller and smaller, and there is often a tendency on the part of the dairyman to cease weighing the milk, because it seems an amount too small to bother with. Do not stop weighing the milk as long as the cow is being regularly milked. Two or three pounds, or even more, at a milking, is a small amount, and yet, when this is reckoned twice a day for a period of two or three months, it amounts to quite an appreciable quantity, and raises the cow's record considerably. This milk is also generally high in fat content.

The Dairy and Cold-storage Commissioner, in his 1911 report, states that the number of cows whose records are compiled for the full period of lactation could be increased by thousands if the association members would only continue to send in their records for the season, instead of discontinuing after six or seven months weighing and sampling.

The records would then be of infinitely more interest and value. As it stands at present, he states that a great many cows of excellent promise have to be omitted just because of this lack of another month or two of records. Could these be included, the average yields of the cows in the association would be raised to a very appreciable extent. Several of the cows with incomplete rec-



Clerkland Kate 2nd (imp.) —24821—.

Ayrshire cow; five years old. Was first at Toronto as a two-year-old and a three-year-old, and first champion female at London, 1911. Owned by Alex. Hume & Co., Menie, Ont.

ords reach such encouraging totals as 10,506 pounds of milk and 342 pounds of fat, and even 11,330 pounds of milk and 330 pounds of fat, in eight months; 12,320 pounds of milk and 377 pounds of fat in nine months, and 13,470 pounds of milk and 452 pounds of fat in ten months.

This shows that if the weighing is continued during the last months of the lactation period, the record appears much higher. All dairymen believe that cow-testing is an advantage, and there is no doubt that it is the only method by which the value of the individual cows in the herd can be reckoned. Records from many herds have shown increases of 20, 25, and even 30 per cent., in the average yield as the result of an intelligent application of the knowledge gained through the systematic study of the performance of individual cows. If the average yield per cow could be increased by only 500 pounds of milk a year, it would mean an additional annual production of over \$10,000,000 in Canada. If all farmers could be made to realize, to the point of action, the possibilities which lie before them, this could easily be accomplished. Cow-testing is undoubtedly one of the greatest means of increasing milk production; and, if it is worth doing for part of the year, it is surely worth doing during the entire lactation period of every cow in the herd. It doesn't require any more time or trouble to do it whether the pail be full or nearly empty, and results show that the practice should not be dropped until the cow is dry.

POULTRY.

Barred Rocks Make a Record at O. A. C.

AN INDICATION OF WHAT IS POSSIBLE IN EGG PRODUCTION.

Not so very long ago, a 200-egg hen was considered a wonder, and up to the present time there are very few flocks whose owner can boast of many birds, no matter what the breed, which have produced this high number of eggs in one year. In a pen at the Ontario Agricultural College of about one hundred Barred Rocks, bred to lay, there are six hens which, as far as known, hold the world's record. These six hens have laid, during their first year, an average of two hundred and sixty eggs each, the highest number to be laid by one hen being two hundred and eighty two. This shows what is possible with good care, feed, housing and breeding. In the house which contains these birds there are fewer hens which laid less than one hundred and seventy eggs during the first year than there are hens which laid over two hundred eggs. Prof. Graham has been breeding these up for a number of years, and has succeeded in establishing a strain of heavy layers. There is no reason why any poultry-breeder cannot, by the careful use of trap-nests, ascertain which are the best and which the poorest layers in his flock. Having found this out, the first thing to do is to discard from the breeding pens the unprofitable hens. In breeding, always use male birds from a laying strain. It works out much like the keeping of milk records and the record of performance in up-to-date dairying. These hens are ordinary-looking individuals, and possess no outward

mark of their extreme heavy production, other than having a healthy appearance and giving indications of being good rustlers. They show good constitution, but their plumage is light in color; and, as a show proposition, they would be nil. Just here, it might be interesting to compare some of the records made by a pen bred to produce show birds, and kept under conditions similar to those under which the layers made the record. The highest number laid by a hen from the exhibition pen was 189, and the lowest was 13, with an average of 122. The highest number laid by one hen in the bred-to-lay pen, as before stated, was 282, and the lowest 128, with an average of 180.

The bred-to-lay pen outdistanced the exhibition pen by 42½% in egg production. Surely this is enough to induce poultrymen to endeavor to increase the value of their hens by promoting a strain of layers. These hens were housed in the new type of open-front house, and received good care, but no special effort was made to increase the number of eggs produced by one pen over that of the other. It is simply an indication of what can be done by breeding. The average egg-production of the hens in the country is between 90 and 100 eggs. Fresh eggs are in great demand on our markets throughout the greater part of the year. Let every farmer and poultryman take the trouble to breed his hens with a view to heavy production, with as great care as do our best dairymen mate their heavy milkers, and the income from the poultry industry would be nearly doubled. What Prof. Graham has done should serve as an incentive and spur our poultrymen on to greater things. No flock is so good that it cannot be improved. A hen that does not lay a profitable number of eggs the first year should not be kept for breeding. Most hens lay more eggs in the pullet year than ever again, although occasionally one is known to do better the second year, one of the College hens laying 190 the first year, and 220 the second. This is an exception, however, and, as a general rule, the pullet, provided she is an early-hatched one, will beat her later record. Put a little system and judgment into your poultry-breeding, and don't expect good results where the breeding is not carefully looked after.