

turning as soon after haying as possible. "If" intended for spring grain or hoe crop, later or fall-plowing will do. "If" the sod contains twitch or blue grass, break up as early as possible, just deep enough to get barley under the rootstocks. Disk and drag until the sod is fairly mellow, then use spring-tooth cultivators and rake every vestige of life into sunlight.

"If" the sod is clean timothy, later plowing will do; "if" clover, it may be plowed at any time before seeding or planting, just so there is time enough to thoroughly settle with disk and drag.

Our fighting of weeds is principally done on the hoe crop, of which we have from forty-five to fifty acres as the regular proportion, being one-fifth of the crops on two farms, and one-sixth on other two. We endeavor to keep hoes and cultivators going regularly enough that those fields will need no after-cultivation, but we cannot always succeed as we would wish, or there would be no weeds on the farm.

Whatever the nature of our soil or crops, we are not likely to get too much organic matter into the soil, or too many weeds out of it, or too much tillage for the crop. ANSON GROH.

Waterloo Co., Ont.

Threshing in Grey County.

Editor "The Farmer's Advocate":

Mow threshing is the only method that would be satisfactory in this part, as farmers have ample barn room for both grain and straw. We aim to keep all straw inside, if possible, as it keeps better and is convenient at all times when required.

The blower is a great labor-saving device. The duster is certainly one of the best attachments ever put on a threshing machine.

Threshing being done in the barn, the grain is always carried in boxes. As a rule, nine or ten hands are required, besides the threshers.

The majority of farmers are not particular enough about the preparation of their granary and bins, and no special care or thought is given the seed grain, all being thrown in together at threshing time, and in spring cleaned out of what is left. J. R. P.

Grey Co., Ont.

Plowing Grain and Corn Stubble.

Editor "The Farmer's Advocate":

In reply to your request for experience in the cultivation of the soil after the crops are taken off, I might say that I fear anything I can say will be of little value to your readers, which are spread over so vast a territory as the Province of Ontario, which is comprising so many different soils and conditions; and when I remember that I was born and have always lived on one of the farms I now own, I realize that my experience will be very limited. The soil in this part of Lambton County is what is termed a clay loam. The rotation of crops we try to follow is a three-year rotation which causes us to seed down nearly all of our grain fields. Some years ago, when in beef production, we usually plowed a field each year after the crop was off and sowed it to rape, with very good results; but as dairying is now our principal line of farming, we have discontinued that plan.

For any fields we do not wish to seed down, we think the following cultivation the best. Gang plow as soon as possible after the grain is taken off, as early in August as can be done, about three inches deep, then harrow down with a smoothing harrow, and let it lie in that condition until, say, the 10th of September, when all weeds and grain will be growing, then double disk it, so that the disks will not ridge it up, and follow with the smoothing harrow and roll. Let it lie in that condition until plowing time, which should not be later than October 15th. I believe more weeds, such as Canadian thistle, ragweed, prickly lettuce and others, can be killed with less work at this season of the year than can be done in any other way. A field cultivated in this way will grow almost any kind of crop you wish. Now, just a word about the after-cultivation of the corn field. Much is being said by Institute speakers and also by the agricultural press, in favor of not plowing the corn field, which I believe is having a very injurious effect on many of the farms of this locality. The result is that the Canadian thistle and many other bad weeds are increasing very rapidly on our farms. I believe that at least three conditions must be adhered to if we wish to be able to discontinue plowing. The first is thorough drainage, for, if the water is lying on the field all winter, it will be almost impossible to make a seed-bed in the spring. The second is thorough cultivation of the corn. I do not think that this can be done sufficiently by machinery, but hoeing and weeding by hand must also be practiced. Third, the weather conditions must be such that you can either disk or cultivate it up to the depth of at least three inches immediately after the corn is taken off. If all these conditions can be carried out, you may be successful

without plowing, but if you fail in any one of these, I believe it will pay well to plow, and as early as possible. If you have a ten-acre field, and cannot plow it with an ordinary walking plow, it will be money well invested to buy a single-furrow riding plow, with a three-horse evener, and a new shear every day to plow your corn field, as ten bushels extra grain per acre will pay the cost, and I believe that is not too much to expect on this clay soil. R. J. W.

Lambton Co., Ont.

THE DAIRY.

Believes in Testing Cows.

A. H. Menzies & Son, "Farmer's Advocate" subscribers at Pender Island, British Columbia, who are breeders and admirers of Jersey cattle, are also firm believers in the system of keeping individual records of the performance of cows, and of using as sires only sons of dams having satisfactory records. In a recent letter they write: "When we started in dairying, with grades, we soon found, by weighing and testing the milk of

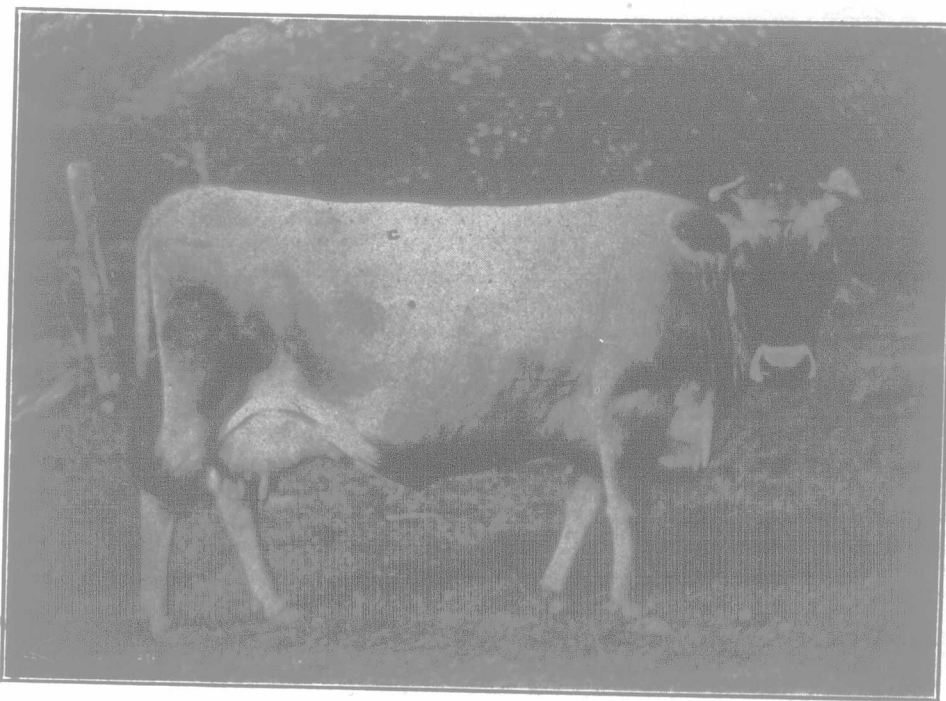
ing their records. One of our cows, Golden Milkmaid (whose portrait is given herewith) began her test at 4 years 243 days, and made a record of 8,442.5 pounds milk, testing 409.411 pounds fat. Lady Buttercup of Pender began her test at 4 years 26 days, and made 9,305.5 pounds milk, testing 466 pounds fat. She has increased that record this year. She gave 9,959½ pounds of milk for the third consecutive year. Buff's Lassie, 2 years and 46 days at beginning of test, has just been milking a little over nine months, and has made over 8,500 pounds milk to date, July 17th, 1912, testing 5 per cent. fat. We think she is making a splendid record for a two-year-old with her first calf, and she is due to calve again inside of the year." Messrs. Menzies wind up with saying, "If one is going into dairying, why not keep pure-breds; and if pure-breds, why not Jerseys?"

The Formation of Milk.

When the constituents of milk are considered, it is seen that amongst them are some—as, for instance, casein and milk sugar—which are not found in any other of the tissues or fluids of the body. This fact proves that the milk is not already

formed in the juices that flow to the udder, but that it must be separated in the milk glands, and pass from them to the cavities of the udder. Milk, therefore, is not a simple excretory product like urine, which is simply filtered from the blood in the kidneys, but it is a substance formed from the fluids of the body by chemical changes in the milk glands. The material which is brought to the utilized first of all mammary gland is to build up certain cells which on completion are wholly or partly destroyed. These products of decomposition are milk, which in this way may be regarded as a fluid organ. It follows that milk is not directly formed from the blood, because of the richness of the ash in potash and its poorness in soda, for the ash of blood, on the contrary, contains much soda and only a little potash.

In the cow, the mammary gland, which is covered with fatty tissue and folds of skin, consists of two portions, which are separated from one another by a wall of muscular tissue which runs parallel to the long axis of the body. Each of these halves possesses a grape-like shape, and is composed of a great number of smaller or larger flaps, which are traversed by small, branching ducts. These small ducts unite to form wider ones, which finally open into a broad passage which empties into the milk cistern—a large, hollow space lying above the teats. If the small ducts above mentioned are followed into their finest capillaries, they are found to end in tiny sacs or alveoli, which compose the small flaps. The alveoli are furnished with a delicate homogeneous membrane, on which a single layer of so-called epithelial cells lies. A dense network of the finest blood and lymph vessels surrounds the outer walls and supplies the epithelial cells, from or in which the milk arises, with the necessary material. Numerous nerve fibres imbedded alongside the blood capillaries regulate the activity of



Golden Milkmaid.

Jersey cow, belonging to A. H. Menzies, & Son, Pender Island, B. C. Began Record of Performance test at 4 years 243 days, and made a record of 8,442½ lbs. milk, testing 409 lbs. fat.



Ayr Review.

Ayrshire bull; first in aged class, male champion, and grand champion of the breed, Highland Show, Cupar, 1912.

each cow, that some were more loss to us than profit, while others that we thought were the poorest were the best payers, so we bought two pure-bred Jersey cows that were the foundation of our present herd. They were nothing special, but, by weighing and testing their milk and feeding liberally, we found that one kept increasing her yield of milk and butter-fat until she passed the requirement of the Record of Performance, and we have now eleven cows milking which have either passed or are expected to pass this year, and more heifers coming in soon, all these, with the exception of one, having come from the two cows we bought. We find it pays to keep increas-

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