

ment of bacteria. The pails are fitted with clean cheese-cloth before they are sent for refilling.

All of the above precautions should everywhere be taken in milking. The following details are given to show how milk for children should be cared for and shipped.

The laboratory in question consists of two small frame buildings, one for washing and sterilizing utensils, the other for bottling the milk. In the first house the bottles are washed, and placed, mouth downward, in a live-steam sterilizer. They are then reversed, and the mouths covered with sterilized linen. In the second house, sugar, and a certain quantity of pure water, is put in the bottles to make the milk as nearly as possible the consistency of human milk. The bottles are corked at once, sealed with wax, placed in shipping trays (covered with cracked ice), and delivered so at the city depot.

Here the mothers get the bottled milk, receive instructions as to how the children should be cared for, and have their children weighed, to ascertain progress. The milk is fed directly from the shipping bottles, a sterile nipple replacing the cork.

Of course, on an ordinary farm, all the bottling, diluting and sweetening of milk would be eliminated; but the reforms in milking and stabling are everywhere feasible, because so simple and inexpensive.

"What are the results?" you ask. Of the two hundred and seventy-three children using this milk during the months of July, August and September, 1909, only thirteen died, and six of these had been reported moribund before using the clean milk.

The infant mortality in Hamilton (including stillborn children) in the summer months of 1908 and 1909 were as follows:

	Deaths Before Campaign.	Deaths During Campaign.
1908.		1909.
July	30	29
August	64	49
September	55	37
	149	115

Could there be a more convincing argument?

In conclusion, we would ask, "If children thrive on this clean milk, do we not want it, too?" Some will say, "The separator takes out all impurities." We answer, "It does not, and even if it did, why should they ever get into our food?" FEMININE OBSERVER.

[Note.—While quite approving the painstaking precautions to insure a pure milk supply, we very much question the wisdom of having the double thickness of cheese-cloth over the mouth of the milk pails, as most of the really harmful dirt falling here would be dissolved and washed through into milk pail, thus contaminating the fluid probably quite as much as if not more than it would if dropped directly into the pail. It is true the cheese-cloth covering has been approved by various authorities, but we are still unconvinced.—Editor.]

Ayrshires in Scotland.

Two years ago I spent part of the summer amongst the Shorthorns of England, and learned something of their lore. This summer I passed almost a month in the South of Scotland, and sojourned in the land of the Ayrshires. The border line is as distinct between the breeds as between the people of the north and south countries. Some of the best Shorthorns of England are found in Cumberland the most northern county, and the constituency of the Ayrshires has an outpost at Gretna, just over the boundary, where Sir John, a ten-year-old veteran, and one of the great breeding bulls of the breed, stands at the head of a useful, profitable herd. From there to Glasgow, through Annan, Dumfries, Castle Douglas, Kirkeudbright, Thornhill, Kilmarnock and Ayr, the Ayrshires have possession of the country. Toward the south, lying along the Solway, there is the district of Galloway, and many fine herds of the black-coated cattle are to be seen on the farms and large estates. There, too, is the home of the blue-gray steer, in which is the blending of Shorthorn and Galloway blood, and many of the choicest butcher cattle are fed off and sold from these pastures. But the Ayrshires have moved beyond their original home, in the county of that name, and now practically claim as their own territory the south and west of Scotland.

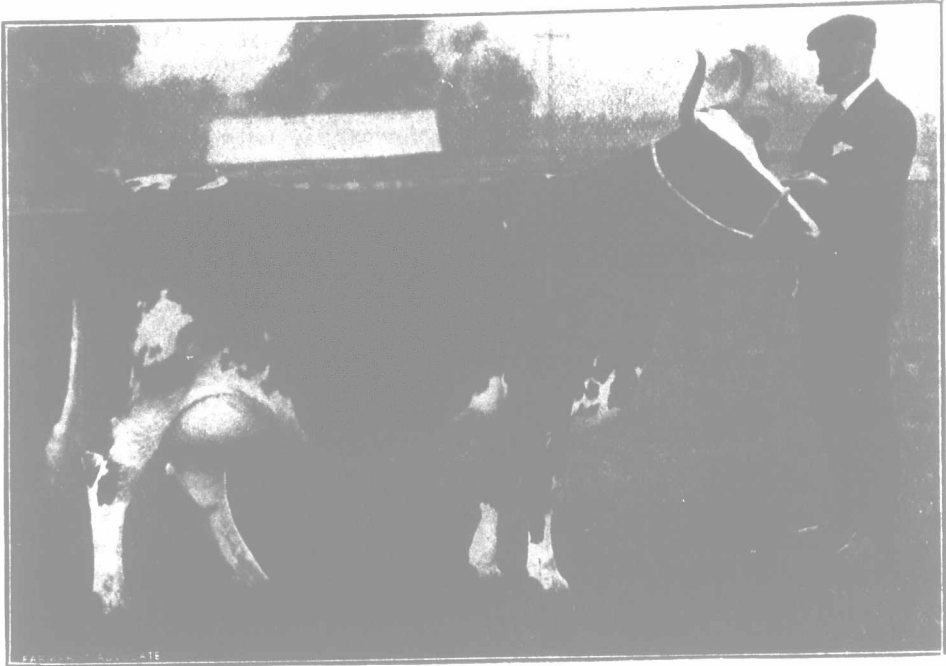
Dairying is the chief industry on the majority of the farms. There are big cheese factories in some parts, and a few creameries, but the great bulk of the cheese is made on the farm. At a few places where I visited the milk was sent away, some of it being delivered to factories, and some of it to Glasgow. The summer price for factory milk averaged about 5½ pence per gallon, and in winter time the large part of the milk is kept at home and made into cheese on the farm. A few co-operative factories have been started

within the last two or three years, but I did not learn how they had succeeded.

To me, the most interesting feature of the dairy business, other than that connected with cattle, lay in the manufacture of homemade cheese. There is scarcely a farm of any pretensions but has a complete cheesemaking equipment in connection with the dairy. Sometimes the men have quite a part to play in the work, but the women of the household have perhaps the largest share. Children learn the art from their parents from generation to generation, and the household have as much pride in their work and as much ambition to excel as snowmen in the fitting of their cattle. A number of times I had opportunity of making the rounds with a very well-known and highly-respected buyer for a large dairy firm in Glasgow. He had once been an instructor, and knew his business in all its details. Upon reaching a place we would follow the farmer up the steps into the loft above the dairy, where the cheese was stored. It stood in rows on long shelves, and had been numbered and dated as it had come in. A genial word was often

its kind in the world. The system which finally evolved is a modification of our Canadian system, changed to meet the requirements of conditions in Scotland, and at the present time the reputation of Scotch cheddar cheese is unexcelled. The quality and uniformity of the product is partly due to the pride and ambition of those who make it, but behind this is a system of education which makes it possible. The County Councils hold classes or short courses in the early part of the year, when farmers' sons and daughters may attend and receive instruction for a month or two as they may be able. I believe that now many attend these classes. Further, there are the cheese shows, notably one at Kilmarnock, held in October, which have done much to stimulate the energies of the people. Lastly, there is the Central School, of which I have spoken, and which is growing in usefulness and popularity. During this last summer the trustees have taken over a farm, and are extending their instruction to lines similar to those followed by our colleges of agriculture.

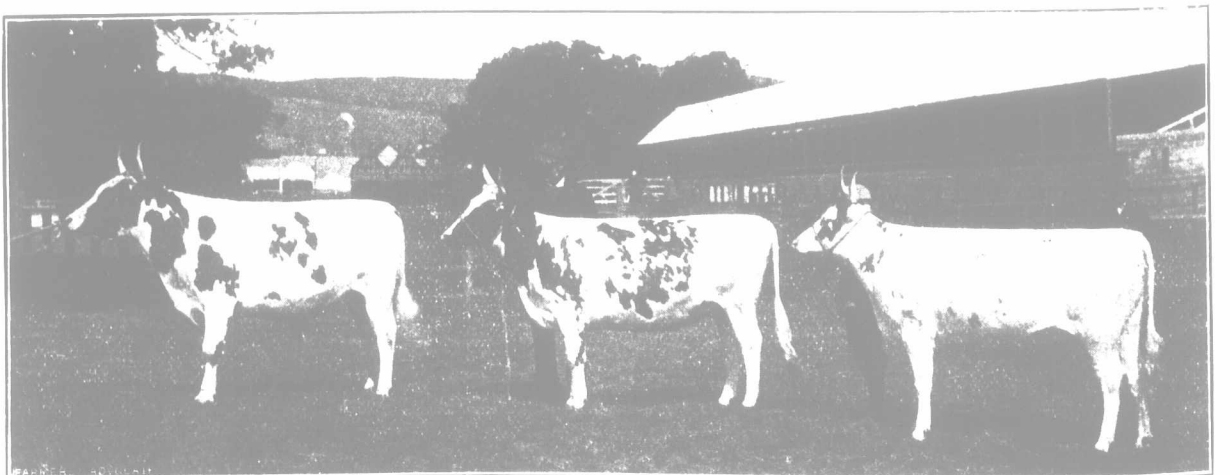
I have digressed from the subject of our discussion, but the digression has been to indicate the direction that dairying has taken in Scotland, and so to illustrate the relation that the breeding of Ayrshires has to the industry of the country. As in England, perhaps the majority of the herds are composed largely of unregistered cattle. To all intents and purposes they are pure-bred, but no pedigree have been kept of them other than those that exist in the minds of their breeders. I learned an immense respect for these old-fashioned herds, and found that the dairies where they were kept had as high a reputation. One thing appealed to me, however, the fact that everywhere heifer calves were raised year by year to



An Ayrshire "Lady Coo."

take the place of the older animals as they passed out of the herd, and thus the standard was maintained. How many pounds of curd do you average per cow, was the question often raised. Usually the answers ranged from three to three and a half and three and three-quarters, and once we were told that for a time in June the average had been over four pounds per cow. A pound of curd is equivalent to about ten pounds of milk. It takes a good herd to reach this average, and I had reason to look to the heifer calves to seek the promise that it would be continued. When we in Canada rear and retain more of the youngsters for breeding purposes, we shall find the statistics-makers less ashamed when they come to compute for a Province the average yield of a cow in milk and fat.

Notwithstanding that there are so many non-registered cattle in the country, records of pedigrees have been kept for many years, and many pure-bred herds are to be found in every district. There appear to be two types amongst these pure-bred cattle—the one, rather an old-fashioned type, bred, it might be said, on old-fashioned farms, but essentially a milk-producing sort; and the other, where symmetry of form has been the ideal sought and the dictates of the show-ring have been followed. The general opinion admits, I think, that the show-ring has not exerted a really healthy influence upon the breeding of milking cattle. Capacity in this respect has, no doubt,



Ayrshires at the Fair.