

the cow and her habits, it will be found that a cow can't do well *with* exercise. She is not built that way—not for speed, nor yet is she a fur-bearing animal, but she wants to be kept quiet and contented, to chew her cud and “work over” her food. Now, to prove that a cow does not want exercise, just take her out after she has been fed the necessary feed to make a large quantity of milk, and I guarantee before the cow has walked a quarter of a mile she will puff and scour. But if I have a cow, just before calving, with a caked under, and inclined to be constipated on light feed, then, besides giving salts, etc., I take her for a walk of a mile or so; that moves the bowels and reduces the udder. I never milk before calving, rather exercise.

A cow to do well requires fresh air certainly, not only on fine days, but every day, and night too. In fact, I find that in testing cows, they do not do so well in murky weather as on bright, clear days. Now, to have fresh air at all times, we must either keep the cow out all the time, or else put her in a stable that is well ventilated.

We might as well try to hatch eggs without heat as to try to produce milk profitably without heat, and the only way to have the necessary heat is to have a warm stable, and it is just as easy and far more profitable to bring fresh air into a stable to the cows than to turn them out to get fresh air. It is a very easy matter to let fresh air in, and not very hard to get the foul air out without taking all the heat out. All that is required is a tight box for ventilation, extending from three or four feet from the floor, and thus three or four feet lower than the ceiling of the stable, so as not to take the heat out, and extending to the roof of the barn, the number and size depending upon number of animals. An up-to-date dairyman gets his big return from breeding and developing a good dairy (1st paper); giving her proper care, water, heat, etc. (2nd paper); feeding properly (3rd paper to follow).

Dairying in British Columbia.

In visiting British Columbia last fall, in the interests of dairying, I was somewhat surprised at the backward state of that industry in most of the sections which I visited. It is quite evident that there has been a lack of interest in this important branch of agriculture, except by the very few who have gone more or less extensively into it. As far as climatic and other conditions go, it is an almost ideal country for butter-making. The summers are never excessively hot, the nights are always cool, thunder and lightning are almost unknown, pastures are luxuriant in nearly all the valleys, the water is good and the winters mild, and what is still more important, the demand is good and prices are high.

My first experience was on Vancouver Island, which for the greater part is mountainous and rocky, very similar to the mainland, and the arable land is found in patches and valleys of greater or less extent, but always surrounded by the everlasting hills. In a trip from Nanaimo, on the eastern shore of the Island, 56 miles by stage to Alberni, on the western slope of the Island, there is practically no farming land to be found until the Alberni valley is reached. This valley is quite extensive, but is heavily timbered, and the clearings are small; and although grass grows on the cultivated land in such luxuriance as is seldom seen, there is but little dairying, as the farms are so small that the few cows which are kept have to roam the woods for a living, and if they can be found twice a day to be milked, all well and good, but if not, they go unmilked. Many follow the practice of letting the calves suck the cows, but they are penned up at home, which is a sure way of bringing the cows home. The calf is first allowed to take a share and then tied up where the cow can fondle it, while the milker takes what the calf has left. This is practiced by many farmers, and the results in butter, we may be sure, are very meager indeed.

On my return to Nanaimo, I took steamer for Comox, which is situated about 150 miles from Victoria, up the Island. Here I found quite a large tract of fine farming land, and I found more dairying here than in any part which I visited. The President of the Farmers' Institute, Mr. McPhee, drove me several miles through a fine farming section, and I had the pleasure of forming the acquaintance of a very progressive and successful dairyman, Mr. Urquhart, of Courtney. Mr. Urquhart was at the time milking 37 fine pure-bred and grade Jerseys, and through his courtesy and kindness I was allowed to see his books, which showed that in ten months from January 1st, 1900, his cows had produced 12,100 pounds of butter, and he was confident that he would make at least 2,000 pounds more before the end of the year, making a total of at least 14,000 pounds for the year, from an average of 35 to 40 cows in milk. The price was down to 20 cents during the month of June only, then it rose to 25 cents, and at the time of my visit it was 30 cents, and Mr. Urquhart expected a further raise in a short time to 35 cents per pound f. o. b. at Comox, as his butter is nearly all shipped by steamer to Nanaimo. His books showed that the snug sum of \$2,969.35 had been received in cash from one merchant in Nanaimo for butter during the year 1899, besides his local trade. Mr. Urquhart farms 110 acres and raises all his feed, except an annual expenditure of \$200 for bran. He has also sold about \$800 worth of hogs during the year. Anyone who is in love with dairying ought to be satisfied with the conditions as they are to be found in that favored locality, for the climate is beautiful,

roses being in bloom nearly all the year 'round, grass grows very luxuriantly, and where clover gets a hold, it stays until it is rooted out, three or four tons of cured hay per acre being a not unusual crop. Corn is but little grown anywhere in British Columbia, but I found a few patches in this locality which had done fairly well. There is considerable enquiry about it everywhere among the farmers, and a great diversity of opinion as to its adaptability to the climate of British Columbia. I found one silo in the Comox district which was just being filled, or partially filled, with corn which had lain for weeks during the wet weather and which would not give either the owner or his cows a very favorable impression of the qualities of corn silage.

From Comox I returned to Victoria, and then, in company with the Deputy-Minister of Agriculture, who is also Superintendent of Farmers' Institutes, we went up the mainland about 300 miles to Kamloops and Salmon Arm, thence down the Okanagan valley, through Armstrong and Vernon, to Kelowna. The trip from Vernon to Kelowna by steamer, 30 miles, is a charming one. The beautiful Okanagan lake, 90 miles in length, deep, but narrow, is hemmed in on both sides by towering mountains between the points named, but on reaching Kelowna we soon saw evidences of being in one of the most fertile valleys of British Columbia. A rig being procured, we drove out several miles and had the pleasure of inspecting some of the tobacco-curing houses for which this valley is noted, as they claim to grow a superior quality of tobacco, which is all manufactured into cigars at Kelowna. Not being a user of the weed, I was not in a position to judge of the merits of the products of this industry, but I was told that they were equal to any grown in the tobacco districts of Pennsylvania, which, of course, I had to take for granted. Besides the tobacco, this valley is noted for its superior prunes and apples, and of the qualities of these I was able to form an opinion without having to take it second-hand. Their prunes are superior to anything I have ever seen elsewhere, and prune-raising is a profitable business, their best weighing from 40 to 50 to the pound, which sell wholesale at 8 cents per pound. Their apples are of immense size, but they are much coarser in the grain than are the apples of Ontario. Great crops of potatoes and timothy hay are grown here and shipped out to the mining towns, and although pasture without limit can be grown, yet dairying is one of the “infant” industries not yet able to walk alone. Farmers seem to think that these lands are too valuable to pasture cows upon, and the cattle are relegated to the mountains, but I will venture to say that not a farmer in the whole valley is making more off his acres than the gentleman I quoted in the Comox district. On our return to Vernon, we took a trip up the White valley, nearly 20 miles, and passed through the beautiful ranch belonging to Lord Aberdeen, which is a sight worth seeing, with its beautiful orchards and hop yards of about 200 acres in extent. The orchards comprise 115 acres, are eight years old, and last year produced about 300 tons of the largest and finest apples I ever saw anywhere. The ranch comprises about 11,000 acres, but much of it is mountainous and rocky, but the cultivated land is farmed to perfection. Irrigation is carried on quite extensively in part of this valley, and here, as elsewhere, great crops of timothy hay are grown, this being the staple crop at the upper end of the valley, which all has to go to Vernon for shipment. No dairying is to be found here, as the farmers seem to have got into a rut, and they are going to stay there for some time to come. Taking the situation as a whole, I think it would be hard to find a country in the world where a man would be as safe in pinning his faith to dairying as in British Columbia, for the conditions cannot be excelled, and prices are high and likely to rule high for years to come. Hog-raising and poultry-raising, which go hand in hand with dairying, are also exceedingly profitable, as there is a fine home market for both these products. Fresh eggs were worth anywhere from 25 to 40 cents per dozen when I was there. There is one drawback, however, to the poultry business in most localities, on account of the proximity of the mountains to the farming lands, which are always a refuge for wild animals which like a piece of toothsome chicken, and this will always be more or less of a menace to this industry in certain localities.

J. STONEHOUSE.

Shorthorns as General Purpose Cattle.

As general-purpose cattle the Shorthorns are without a rival. Other breeds have their special points of merit, but for “all-round” excellence the Shorthorn stands alone. This is one of the secrets of the great popularity of the breed all over the world. With farmers and dairymen generally Shorthorns of a good milking strain are special favorites. Animals of this type are not only deep to an end and their milk supply falls off, they possess such a well-developed aptitude for laying on flesh that but little difficulty is experienced in getting them into suitable condition for being sold as beef. There are many who hold that it is a mistake to aim at getting the two qualifications of milk and beef production in the same animal, but the experiences of some of our best dairymen do not go to support this contention. So long as the milking properties of the Shorthorn are properly cultivated, so long will the breed hold its own as the best general-purpose breed in existence. *Agricultural Gazette.*

ENTOMOLOGY

Silk Culture in Canada.

(Second Article.)

These are not magazine articles written to please the ear, but they deal with what the writer knows to be facts, and are written in the thorough belief, reached after very careful experiment and extreme inquiry, that silk culture can be, and some day will be, an important and profitable industry in Canada, and one very especially for the benefit of the old and infirm and for households where the family is large and the income small. How it is to be established, and who is to do it, the writer does not know. His sole duty at present is to tell what he knows. From personal experience, he knows that silk of fine quality can be produced in Canada, and believes that in every part of the country where the mulberry or osage orange will grow it can be produced profitably.

In the issue of the ADVOCATE of Dec. 1st last, in which the first of these articles appeared, there was a report of a discussion on this subject at the meeting of the Entomological Society, in London, in November, and it was stated that the conclusion reached by the experts there was, that while silk could be raised in some parts of Canada, it could not be done profitably, because even the poorest of our people could not compete successfully with the cheap labor of silk-raisers in different countries in the world. This conclusion is not new, nor is it, perhaps, correct. We in Canada can and do compete profitably with the cheap labor of all the world in the production of every other thing that can be produced in this country, and it remains for those who say that silk production is an exception to show why it is. For centuries silk has been produced in Europe and in Asia, the worms being fed and the silk reeled by the hands of people, old and young, who had no thought in the doing of it beyond the fact that their labor would result in the acquisition of enough poor food to keep them alive a little longer. They have little intelligence, and could not be expected to improve the breed of their worms, or to desire to see machinery take the place of hand labor in the reeling of the cocoons. We in this country have intelligence, and as surely as we can and do improve the breed of our cattle and other things, so we can and will improve our silk worms, and for the same labor we can, after a few seasons of intelligent culture, reap a harvest of silk not thought possible to-day, and as for reeling machinery, in the United States in the seven years in which experiments in silk-raising were made, each year saw improvements in the reels, and had the experiments not ceased when they did, we would by this time have had much more perfect machinery, which would have reduced the cost of reeling so much that even the very cheapest labor anywhere could not compete with it.

As has been said, experiments were made in the United States for seven years, viz., from 1884 to 1891, the experiments being under the direct supervision of the Government at Washington, and any person living within reach of a public library in any U. S. city can see what the results were by consulting the “Annual Reports of the Department of Agriculture” for the years named above. An excellent quality of silk was produced over nearly the whole country. Electric silk reels were set up and remained in operation for several years, and improvements in these reels were constantly being made in the direction of economy and efficiency. But owing to the expense of reeling, those in charge of the experiments could not pay enough for them to induce the people to raise the cocoons, though it was found that the mother and children of an average American household could, almost without the help of the men, produce enough silk to net them from twenty-five to forty dollars for their five or six weeks' work of feeding and caring for the worms, and that without interfering with their other duties. The experimenters saw that if a protective duty of say one dollar a pound on imported raw (reeled) silk could be imposed, they would succeed, and an earnest effort was made to induce Congress to give them this protection, but it is plainly said that because of the influence of American silk importers, whose business interests were at stake, Congress failed to give them the help needed, and the experiments came to an end on June 30th, 1890, and there are now, a letter from Washington says, no silk-reeling establishments in the United States.

No one should say that fortunes can be made by silk-raising, and the writer wants to keep within conservative bounds in speaking of it, but his opinion is that there is a little money for a great number of people in it and a fortune for the man or men of brains and means who will buy the cocoons and reel and manufacture the silk. A protective duty, as indicated, might be necessary at first, and no doubt that could be obtained, as no silk is reeled or manufactured in Canada, and, consequently, no business would be injured; the writer thinks in a short time it would cease to be required.

Any one of your readers (who has a mulberry tree within reach) who would like to try raising silk, can have some silkworm's eggs by sending a stamp, to pay postage, to the undersigned, and it will be necessary to make application soon, so that the eggs may go through the mail while the weather is yet cold. He will be glad to correspond with anyone interested in this subject.

Essex Co., Ont.

W. M. FLEMING.