

most desirable size. Very large teats are nearly always on flabby, narrow, deep-hanging bags, which are detested by experienced dairymen. Such vessels are never seen on Ayrshire cows; they are always neat and trim. It is a mistake to suppose, as some do, that large teats are an indication of great productiveness. Large teats are readily injured, and in keeping them clean there is much trouble.

The ordinary life of man is too short for individuals to be experimenting with many different breeds of dairy cattle; hence, methinks, parties engaging in the dairy business should be guided largely by the experience of others.

Some of the Many Things I Do Not Know About Shorthorns.

[Paper read before the Shorthorn Breeders' Association by John Idington, Q. C., of Stratford.]

In this Province there are estimated to be about two million cattle; of these the pure-bred Jerseys, Guernseys, Holsteins, Herefords, Polled-Angus, Galloways and Shorthorns form but a small portion. It is not assuming too much, I fancy, to say that pure Shorthorns outnumber all these other pure-bred cattle put together. And it may be claimed, without offence to the breeders of these others, that the grade Shorthorn in a still larger proportion outnumbers the grades derived from all these others. Can this ascendancy be long maintained? Can it be made still more marked in the process now going on of pushing the nondescript scrub out of the field? What hinders and what will help such a result may well come under consideration on this occasion. In making these suggestions it occurred to me to throw into a short paper some of many things I don't know about Shorthorns.

The special purpose cow has very earnest advocates. If we had special purpose farms these men might have, if not the best of the argument, at least enough on their side to command attention. But what are the facts? The census returns of 1881 show for this Province 782,243 milch cows, and 886,661 "other cattle." Assuming same proportion to exist now there are nearly nine hundred thousand milch cows in stock. What classes of people own them? To what use are they put? Are they not chiefly in the hands of the ordinary farmer to supply his family with milk and butter, and a surplus of butter for the market? And are not the other cattle, as distinguished from the milch cows, chiefly in the same hands, and consisting of stock raised from these cows?

The breeding of Shorthorns, under such surrounding conditions, should be viewed in the light of what is needed to render these cattle profitable. Is it for that purpose desirable to breed the sort of Shorthorns that will make for beef alone, regardless of milk and its products? How many farmers make the raising and feeding of cattle for beef the main part of their business? Is it not the case that in Ontario the steer is, as it were, mainly a by-product of the farm? Is this not also true of the old cow, the non-breeding heifer, or the unprofitable cow? What sort of bull will tend to increase the value of these by-products, whilst preserving the main object of getting that fairly good milker these farmers want?

As we have no large ranches solely devoted to pasturage or corn, with which to feed cattle, can our farmers afford to use the Shorthorn bulls that will obliterate the milking qualities of their herd? Have we not been working in this direction? How long can we persist in doing so under the conditions surrounding us without a reaction setting in against our favorite breed? And if that reaction does set in, will there not be a serious danger, not only of the Shorthorn ascendancy being lost, but also of some other breed commanding the field as Shorthorns do now?

We are told on the highest authority that "the longhorn cattle in their native home were suddenly swept away, as if by some murderous pestilence, by the introduction of Shorthorns." Is a recurrence of such a phenomenon at the expense of Shorthorns an impossibility here? How many Shorthorn herds, for example, exist now in the State of New York? Compare what are there now with what were there thirty years ago or so. Are they either absolutely or relatively, either in numbers or quality, what from their position then might have been confidently predicted for them now? Have they not been largely supplanted by the Jersey, the Guernsey, the Ayrshire, and the Holsteins? And have not the Shorthorns moved West? Will ours move West? Is it desirable they should, and be supplanted by breeds such as so largely supplanted their kindred in New York State? Is that desirable, either for the welfare of this Province or the Shorthorn breeders? If not, can we, and are we doing that which will avert it? How can we avert it? The ordinary farmer buying a bull often knows

little of pedigree, and less of the past history of Shorthorns. He follows where the majority of the members of this Association leads. He wants milk and butter, and beef to use or carry to a profitable market. He has been buying, and is yet buying, our stock on the faith of their producing this combination. He knows what he wants, even if he don't understand the pedigree, or what has made, or will come from the animal offered. Are we giving him that animal that will produce it?

Again, the dairy farmers who supply our cheese factories and creameries raise but few calves, and are only concerned in the beef question to the extent of selling to advantage their cows that from age or accident have become unprofitable. The dairy farmers form but a fraction of the great aggregate mass of cattle owners. They are, however, of the best and most prosperous farmers in this country. Their requirements and opinions must have a powerful influence in fixing the judgment and forming the fashion that will prevail, not only amongst and for themselves, but also all other farmers in regard to the best breed of cattle to use. Can we meet their requirements? The Columbian Fair Grounds, and many an English dairy farm, answer in a way to encourage us to hope that we can. If we cannot monopolize their custom as absolutely as we can that of the ordinary farmer already referred to, can we not at least share it? Can we not make of them friends, if not partisans of our Shorthorns? Are we not coming dangerously near to courting their hostility? My questions may seem to suggest guesses at truth that resemble danger signals. If no need to hoist the signal, sail on as fearlessly as of yore. But if there be rocks ahead, and close at hand at that, how came they there, and how can they be removed or passed?

The high prices of beef cattle, not so long ago, for a considerable time encouraged the breeding of Shorthorns of a purely beef type. The open market of the great corn belt, and the greater ranch ground of the more remote West, seemed to furnish an unlimited market for bulls of the same type. That market is practically closed by quarantine regulations, and even if these be in a few years removed, the market from other causes will not be what it has been. The price of beef cattle has fallen to such an extent that it would be unwise to attempt to force, if we could, farming into the special purpose of raising beef alone. Meantime we have become so much accustomed to admire the fine appearance of a plump, fleshy, nicely rounded, smooth animal, that we keep in much the same old line. Can we afford this to please the eye and gratify the butcher and his customers? I hear that early maturity compensates. Is early maturity a quality that belongs only to this sort of cattle? Even if it is, has the pursuit of early maturity been pure gain? Has the idea of early maturity not been pushed to an unreasonable extent, and in a wrong direction, and by erroneous methods? How much have we lost in its pursuit? Has it, in the manner of its attainment, not tended to beef at the expense of milk in the quality of the animal? Even from a beef point of view alone, have we got nothing but gain in getting early maturity? Can the very early maturity of any breed be brought about without lessening the size of the animal? Has not early maturity in Shorthorns in some cases been attained at the expense of size? Or has reduction in size contributed to early maturity? Or has size been maintained whilst early maturity has been obtained?

Can the breeder profitably do more in this aim at early maturity than eliminate from the structure of his animal such, or reduce so much of the parts thereof as may, under changed conditions of existence, be desirable? The reduction of bone or dropping of horn, for example, may save expense of food. But when the process has gone so far as is consistent with maintenance of size, is there any gain in further reduction?

Is there an early maturity that may be gained by increased food and care, and another that may be gained by reduction of size without increased food? How is the latter got? Does early mating produce it when persisted in for several generations? Is it, when thus got, a desirable result? Have we Shorthorns that, in whole or in part, thus acquired it? When systematic breeding for several generations has reduced a larger to a smaller type, and thereby fixed a small type that has in the process acquired some advantageous qualities, can we expect to use successfully this smaller type by crossing it upon the original larger one? Assume each, in all its parts, equally well proportioned, can a cross either way be prudently adopted?

Is it not extremely probably that in the process there will be a disturbance of the symmetry or proportions of some of the various parts that will tend to destruction? Is this mistake not being made, even in the home of Shorthorns now? What bearing has the length of life upon the quality of early maturity, or the quality of early maturity upon the length of life? Will an animal that carries in it, from birth, life forces destined to bear it along for a period beyond the average life of its kind, attain maturity as soon as one in which the original life forces are such that it will naturally die short of such average life?

Does the breeder not feel more at ease with animals whose pedigrees show in their immediate ancestors an unbroken series of long lives than with a herd whose history is the reverse of this?

Returning from this digression of what may be set down as very heterodox challenges of received opinions, and coming again to our milk supply,

what other causes than beef type, by early maturity or otherwise, have operated to deprive our herds of their milking quality? What has the enormously high prices of certain tribes not done to injure their race? Granting that these high prices attracted the enterprise and valuable support of many most desirable friends, and advertised and pushed forward the extended use of the breed in a way nothing else could possibly have done, has there not followed great evil?

Assume that originally a man of genius moulded a cow that surpassed all others in the qualities we now need, are these qualities there now? If there, are they so in as marked a degree as when the master's hand was withdrawn? If not, what contributed to their loss? We often hear and read of inbreeding having wrought, if not disaster, at least loss of many valuable qualities in certain tribes of what were once held to be our best Shorthorns. Is this the sole cause, or even the main cause, that truly accounts for what is alleged against it? Is it not rather the least forceful source of the evils complained of? Is it not rather the truth that the very excellence of the cattle thus produced laid the foundation of their deterioration, if not of their destruction? This may seem paradoxical, but yet is it not true? The good surpassing qualities brought enormous prices. The enormous prices tempted the owners to use everything that would live and breed. There was no selection, and without selection, either natural or by the directing mind, nothing that lives or grows can maintain a high standard of excellence. The marvelous profits that seemed within the grasp of anyone owning and breeding these cattle tempted men of means, sometimes ignorant of everything that the breeder must, to succeed, know, to invest and embark in that for which they had neither the genius, the instincts nor the training to bring to a successful issue.

The necessity to please the eye tempted the abandonment of milking, or even nursing calves with such precious matrons as these. Could the original good milking qualities be thus maintained or propagated? We are told to remedy these mistakes of the past by selecting the good animals, and then see if the pedigree be right. Both may be found unobjectionable and yet may lead astray. Is it not a fact that Shorthorns have diverged in type to such an extent that the crossing of the extremes of type, even with most excellent individuals, might be the grossest blunder?

What, then, is to be done to meet the present emergencies? Will our masters please rise and tell us? I believe that he who wishes to learn must begin to doubt and to question—no progress is made by unquestioning faith; hence, I have been bold enough, with very limited experience and none of the qualifications of an expert, to submit in this paper much that challenges the work of my superiors in Shorthorn breeding.

If I provoke the discussion of these superiors on many points regarding which, in common with many others, I dwell in ignorance, I shall be amply satisfied. If I ventured to suggest anything, it would be something like this: The common Canadian cow is often an excellent milker. Encourage the selection and use of the best of such for breeding, and the destruction of all else. Encourage their owner to select the milking families of Shorthorns in adopting the Shorthorn cross. Encourage our farmers to believe that Shorthorns are not made for beef alone. Encourage our Shorthorn cows to milk. Encourage our Shorthorn breeders to select from the sort of Shorthorns they have, bulls of the like, but of the best milking families of kindred type of cattle. Encourage the Shorthorn importer to keep his eye in his buying so open to see the animal that will revive and restore the milking qualities of our herds.

And I would say to the young man beginning to breed Shorthorns, that if he devote his life energies to it, there is, if he has the instinct and genius for the business, as rich a field here in Ontario to mould out of broken pieces a harmonious whole as he can wish, and there awaits fame and fortune in the evening of his days.

Feeding Fat Into Milk.

Hoard's Dairyman of June 22nd records the facts of an interesting experiment, conducted in Schoharie County, N. Y. Four cows were treated to find out whether fat fed influenced the fat of milk. Before the experiment commenced, cow No. 1 weighed 1,180 pounds, and made fourteen pounds of butter per week. Cow No. 2 weighed 1,130 pounds, and made twelve pounds of butter in a week. Cow No. 3 weighed 1,168 pounds, and gave eight and a-half pounds in seven days. No. 4 weighed 1,000 pounds, and gave thirteen pounds one ounce butter in seven days. On an average 23 pounds of milk were required to make one pound of butter. The previous feeding was, per day, 40 pounds ensilage and twelve pounds of a mixture of wheat bran, cotton-seed meal and corn meal. The skim milk was also fed back to the cows. When the experiment began one-quarter of a pound of tallow was shaved and mixed with the ration twice a day, increased to two pounds per day in two weeks. The following is the result:—Cow No. 1 made 20 pounds of butter in seven days; cow No. 2 gave 17½ pounds; No. 3, 16 pounds 14 ounces; and No. 4, 17 pounds and 1 ounce in seven days. Just 18½ pounds of milk was necessary to produce one pound of butter. The quality was so near like that made before the experiment, that no difference could be detected by customers who regularly received the butter.