

The most fruitful source of loss to farmers in Canada in the past has arisen from the starvation of their lands, and without a doubt this practice originated in the exigencies of each individual situation, which eventually became habit. Keeping cows on short allowance is just on a par with this, in so far as the loss is concerned, but the latter practice has an element of cruelty in it that is not in the former. We are all familiar with the words of the beautiful hymn, "Kind words never die," and we all know that kind deeds live, if possible, even longer; but the application of the words is by no means exhausted from its primary reference to the human race. Kindness to the brute creation is one of the best investments a farmer can make, for he draws from it an approving conscience, the satisfaction of knowing that his work is prospering and increased returns for his outlay. Certain mistaken metaphysicians have thought that it is a clever thing to cheat a lawyer, but it is no sign of cleverness to cheat a cow. It is neither just, nor generous, nor wise, but on the contrary, it is unkind, unfair, shortsighted and cruel.

Mr. W. H. Lynch's Book — "Scientific Dairy Practice."

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

DEAR SIR,—Really instructive and useful dairy literature is scarce. There are a number of compilations of commonplaces—too often misleading—which pass under the general title of "works on dairying." Of these I have nothing now to say; my only sincere utterance would have to contain an expression of great sympathy for their authors and readers. But as a book full of sound information for progressive dairy-men I have not seen the equal of "Scientific Dairy Practice." The title is perhaps a bit too pretentious, unless the author goes on and binds in the same volume as much terse and valuable advice for cheese-makers as he has already put up in well chosen words for the guidance of those who make butter. The preface is concise, and like the rest of the book, goes straight to the point to be presented. The treatise is written in two parts. Part I deals with "increasing the market value of the product;" Part II with "lessening the cost of production."

It is evident to every calculating dairyman—and all others might as well go out of the business before losing any more money and peace—that the line of profit lies directly between these two points—market value and cost. The higher the former and the lower the latter, the more profit is there left. The apparent purpose of "Scientific Dairy Practice" is to help to bring about that to-be-worked-for and welcomed state of affairs in butter making. If those who read it—and every man or woman who owns or milks a cow should read it—will take as much pains to faithfully and systematically carry out its teachings as I judge the author must have taken to make them trustworthy and practical, "bosh" butter will become enjoyably rare. It may then fetch even a fancy price, as an old-fashioned curiosity sometimes does. Thus our Canadian dairy writer will be a benefactor to even those who fail to read or neglect to adopt his recommendations. Let me quote a few paragraphs:

"IMPROVE THE QUALITY."

"Quality is the first necessity of every marketable product, but it is more than ever a necessity in butter and cheese. Compare one of these products with another farm product, say one of the cereals; compare, for instance, butter with wheat. Wheat is an ordinary necessity. Butter is mainly a luxury, it is only as a luxury that it becomes a necessary at all. When it ceases to be a luxury, it soon ceases to be a necessity. Butter remains a luxury only so long as its quality is good; when the quality depreciates to a certain degree, the created appetite for it is not satisfied, and demands a substitute or nothing. The demand for butter, therefore, in a far different sense than that for wheat, depends upon the character of the article supplied. Again, there is a difference in the value of different samples of wheat; but the difference is slight compared to that of the different lots of butter, which varies in its quality not ten, or even fifty, but several hundred per cent. The value of wheat may be decided easily at sight, almost by mere weight; the

quality of Lutter can be determined only by careful examination and test, and even then only to a degree. The keeping quality of a sample of butter cannot always be known even by an expert. Butter cannot, like wheat, be stored or transported, and with little risk of depreciation; it requires special precautions and is liable to serious depreciation in value." All of which is terse and true.

"Quality is so much dependent upon the manufacture of milk products that the process of manufacture will be described in this connection.

"MILK."

"Too much stress cannot be laid upon the fact that milk must be pure. Impurities in milk affect unfavorably not only the value of its products as articles of diet, but the very processes which give the products. For instance, the drinking by the cows of impure water, the dropping of impurities into the milk itself, not only render the milk an improper diet, but make more difficult and unsatisfactory the manufacture of milk products therefrom. While milk is extremely sensitive to odors or taints of any kind, the animal source of milk makes it especially subject to chances of contamination. The health of the cow, what she eats or drinks, the kind of treatment to which she is subjected, will affect the milk for good or ill, even before it is drawn from the udder. The surroundings of the milk while it is being drawn are always more or less unfavorable to purity and cleanliness. Even while milk is being secreted it is liable to taint. Instances are many where milk has been known to take in impure odors through the breath of the cow."

The gist of conclusions from general experience is well set forth thus.

"Bad food will produce impure milk. Food and water are the raw material from which milk is directly manufactured. If the raw material be poor the product will be faulty. Wholesome food and pure water are absolutely essential to the production of good milk. In the pasture, swamp weeds, wild onions, and other sorts of wild weeds, injure the quality of the milk; and in the stables, turnip tops, cabbages, and even half-ripe potatoes, in any considerable quantities, do likewise."

Here is a sentence clean cut and clear.

"When a cow is worried by a dog, or abused by any brute, be he quadruped or biped, the milk is at once affected."

"MILK AS AN ABSORBENT."

"All liquids are ready absorbents of odors or impurities of the atmosphere. Milk is 87 per cent. liquid. The readiness with which milk will absorb impurities and the evil effect upon it of such absorption, is not fully appreciated. The time when milk is most absorbent is when it is colder than the surrounding medium. The greater the degree of difference, the more rapid the absorption. When milk is warmer than the air surrounding, and consequently cooling down, it is less absorbent, for then it gives out, rather than takes in, impure odors. This is fortunate, for it saves, partially at least, the milk which is drawn in ill-odored stables. The odors found in milk that is quickly removed from stables, come, doubtless, not by direct absorption but through the breathing of the cow, or from something falling into the milk. But when the milk cools down near to, or below, the temperature of the air or liquid which surrounds it, it becomes an absorbent."

Every phrase of which is sensible, therefore scientific, therefore useful.

This on "Washing Milk-Vessels" might be double-leaded and a copy hung in every dairy.

"WASHING MILK-VESSELS."

"The cleansing of milk-vessels must follow not alone the same day nor the same hour, but immediately after their use. It is not possible to cleanse milk-vessels so easily or so well after the dirt has dried on and in them, as when they are still fresh and damp after use. If sometimes a slight delay be necessary, let the vessels in the meantime be filled with, or plunged into cold water. If water be not abundant, let the vessels be rinsed immediately, and a little of the rinsing water left in each. This, on the whole, will not be extra labor. For the first washing of milk-vessels hot water should never be used. The first water should be either cold or only slightly warm. Scrub the vessels well in the first washing, to free them from most of the solid matter which adheres to their surface. Where the vessels are oily or greasy, which they will be when cream has adhered to the

sides, they should be washed with water not scalding, but warm enough to melt the oil. The vessels should now be scalded and rinsed, using a mop cloth, a swab, or any suitable brush, to rub the vessels and save the hands. The vessels may then be quickly emptied and drained in a warm place.

If the rinsing water be as hot as it should be, and abundant, and the draining done quickly, no wiping is required. Where a towel is used however, a clean one is required for every washing. Air the vessel outside, whenever practicable, in the free air and sunshine. When milk has soured in the vessels, or the washing has been delayed, greater care is needed in washing. It is the practice of some good dairy people to give an occasional sweetening wash to the milk-vessels, using soda, or soap, or lime, or lime and ashes, or nettles, etc. It is well, however, to remember that when any chemical is used in cleansing of milk-vessels, the rinsing of the vessel should be thorough, so as to wholly remove all trace of such chemical, for its presence may give trouble in the cream-rising, and the churning."

Let me add that the rinsing water should be not merely hot, but boiling hot.

"A thermometer begins now to be a dairy necessity. Temperature is one of the most important factors in scientific butter-making, and the thermometer is the instrument by which temperature is determined. The sense of feeling cannot be depended upon to tell the temperature accurately for dairy purposes, any more than one's inner consciousness may be depended upon to tell the hour of day or night. There should be a thermometer in the dairy of everyone in whose house there is a clock. The writer has been accustomed to represent the thermometer as the key to scientific butter-making, it being a symbol of definite rules of working."

May I counsel every reader to buy a good one first day he goes to town, unless he already has one?

On "the theory of cream-rising," the author is less accurate, concise and exhaustive than usual, but his practical advice is sound and logically put under the head of "conditions favorable for cream-rising."

After some sentences on the aeration of milk with the "theories" of which the present writer does not agree, Mr. Lynch puts up further good advice thus:

"The time when aeration is specially advantageous is when milk is *defective at the start*, as, for instance, in the heated days of summer, or when it has to be cooled down for transportation in closed cans. Care should be taken to aerate the milk while it is still warm."

"The time when aeration is to be avoided is when the milk is colder than the atmosphere, or when the atmosphere is at all impure. Aeration when employed must be carried on quickly, otherwise the loss of time before setting will offset partially the advantages."

"There is no question as to the advantage of aeration and cooling of milk intended for transportation to any distance from the farm; but there is some question as to the advantage of aerating milk in ordinary butter-making. In some experiments made by the writer, the aeration of milk seemed not to be advantageous; whether due to the agitation or to something else it is yet difficult to say. All things considered, one of which is the labor and delay involved, it is doubtless, better to set milk at once, for cream-rising, at least if the milk itself be in good condition. Whether agitation would be advantageous under the peculiar conditions of imperfect milk, it will be better for each one interested to determine, according to the special circumstances of the case."

I have taken these eight quotations from the first 10 pages of a 100 page pamphlet. Every page is well worth reading, and has much worth remembering. I heartily commend it to Canadian farmers and butter-makers. Its price is only 25 cents. I presume any bookseller can supply it. The publisher's name on the title page is, A. S. Woodburn, Ottawa.

Yours truly,

JAC. W. ROBERTSON.

Montreal, 13 June, 1887.

"I had intended dropping the JOURNAL first of Jan., but the more I became interested in valuable stock breeding and a better system of agriculture, the more I appreciate the advice and instruction your paper contains, and would cheerfully recommend it to all farmers who desire to increase their knowledge, and advance in agriculture."—M. Bogart, Napanee, Ont.