

loss, proportionately. The educational value of the system would be immense, as the progressive farmers would potentially wake up their slothful neighbors.

Cow's Milk for Infants.

Owing to the hurried strides which are being made in civilization, the milk of the cow is rapidly coming into extensive use for the use of infants, and the result is a large increase in infant mortality. From two-thirds to three-fourths of the infants in U. S. cities are nourished on cow's milk, but it is not positively known whether the alarming increase of mortality is to be attributed more to adulterations, to the unsuitableness of the milk of the cow, to the lack of knowledge in preparing it for infants, or to the milk as a carrier of contagious diseases. The qualities of the milk from our domestic herbivora vary materially, but, following the chemical composition, cow's milk is generally regarded as being best adapted for the purpose.

The following table shows the average percentage composition of milk from the various domestic animals:

Composition.	Cow.	Goat.	Sheep.	Mare.
Water	87.65	85.5	83.0	92.3
Butter-fat	3.40	4.8	5.3	0.6
Casein	3.00	3.8	4.6	1.2
Albumin	0.40	1.2	1.7	0.7
Milk Sugar	4.80	4.0	4.6	4.8
Salts	0.75	0.7	0.8	0.4
	100.00	100.00	100.00	100.00

Compare the above with the following table showing the minimum, maximum, and average composition of woman's milk:

	Minimum.	Maximum.	Average.
Water	83.21	89.08	86.73
Fat	2.11	6.89	4.13
Milk Sugar	5.40	7.92	6.94
Albuminoids	.85	4.86	2.00
Ash (Salts)	.13	.37	.20

With respect to normal cow's milk, the following variations in the chemical composition may occur: Water, 85 to 89 percent; fat, 2.5 to 7 percent (the ordinary variations are from 3 to 5 percent); milk sugar, 3 to 6 percent; casein and albumin (albuminoids), 2 to 5 percent; salts, 0.4 to 0.8 percent.

Now, with these figures before our eyes, it can be distinctly seen that cow's milk does not always come nearest to the chemical composition of human milk. It is the usual custom to add some sugar to the cow's milk in preparing it for infant food, and although this is the only rule which can be safely followed in every case, there are often other considerations of much greater importance. The great abundance of salts in the milk of our domestic animals, compared with those in human milk, is distinctly marked, and the salts are highly stimulating, these being the active principle of beef tea. This is probably one of the reasons why the watering of cow's milk for infants has been practiced.

Probably the most important consideration is the reaction produced by the different qualities of milk; the milk may be too acid or too alkaline. The test of alkaline and acid substances is litmus paper, acids turning blue litmus red, and alkalis turning red litmus blue; in neutral liquids, the blue litmus is not turned red, and the red is not turned blue. Different qualities of milk, even in their healthy condition, have not always the same reaction, so that this test cannot always be depended on, and authorities

are not yet decided upon the quality of milk based upon its reaction. It has been observed that if a strip of blue litmus paper be held in normal cow's milk about a minute, the milk either does not change the color of the paper, or at most changes it into a violet shade. If the blue litmus turns distinctly red, the milk is sour. If the color of the blue paper does not change, then hold a strip of red litmus in the milk, which should either remain unchanged or turn but slight red. The nature of the food consumed by the cow often changes the reaction, however, the milk sometimes being acid and sometimes alkaline; but woman's milk usually has a pronounced alkaline reaction. The safest rule is to obtain for infants milk from cows fed largely on hay or grass, the milk producing an alkaline reaction, while other foods, notably slops of all kinds, produce acid milk. It is not unreasonable to conclude that a potent cause of infant mortality is the feeding of milk from cows fed on distillery slops, it producing a strong acid reaction.

The chemical composition of the milk of carnivorous animals differs very widely from that of herbivorous, so that the milk of the former is very unsuitable for infants, while human milk closely coincides with that obtained from herbivorous animals. Does this fact tend to prove that man is an herbivorous animal by nature and that his carnivorous propensities are the result of habit?

Our Dairy Exhibit at the Colonial and Indian Exhibition.

To the Editor of the Farmer's Advocate:

SIR,—The Ontario dairy display at the Colonial and Indian Exhibition is the most noteworthy dairy event of the year in England. So writes an eminent authority on dairy matters, who is also agricultural editor of the *Morning Post*.

The press of London and England have been generous and just in their comments on the fine appearance of Ontario's exhibits, and have also noticed with satisfaction the favorable impression produced on the public mind. The Canadian agricultural trophy is in itself a most striking and artistic aggregation of our products, from raspberries and honey to sides of bacon and barrels of flour. Beside it fittingly stand the two pyramids of butter and cheese. In their bases are placed the monster 1,000 lb. cheese, which calls forth the most wondering and laudatory remarks. They are frequently, at first sight, taken for "dummies," on account of their huge size, but a close inspection satisfies the curious that they are for the mouth as well as the eye. The truckle cheese (12 lbs. size) have been very useful in setting off to advantage on the shelves the larger Cheddar sizes. Room has been found in the pyramids for nearly 300 cheese, large and small, besides the tubs and tins of butter.

The shelves have their edges decorated with colored strips, on which is printed information of the sources and character of the goods. Descriptive cards of all colors and shapes ornament their sides. These cards set forth such facts as—"Ontario has 752 cheese factories in operation;" "Ontario leads the world in cheese making;" "Our products are all from pure, whole milk only;" "Ontario makes no butterine, no oleomargarine, no imitations." Every-

where prominence is given to the advice: "Ask your grocer for Canadian cheese and butter."

At a side counter and at three other stands in the exhibition, a brisk trade is done in supplying 1d., 2d. and 4d. samples. Their fine quality is thus brought directly to the palates of thousands of consumers in a week. Each sample is neatly done up in an oil-paper wrapper printed in appropriate style.

The quality of our cheese is already well known to the trade, but the excellent condition and quality of the sample lots of butter surprise men in the business to whom they are shown. The splendid body, sweet, clean, rosy flavor, and uniform color and saltiness, commend it to all who examine.

I have it on the authority of business experts, who buy largely of Danish butter, that our finest Canadian creamery is quite equal to first Danish. Heretofore the Danish has led the Canadian in price by about 20 percent. If the Canadian creamery men will do their best next season, they will not only equal the Danes in the price realized, but will have more favorable standing in the market than any continental producers, since Canada neither manufactures nor exports oleomargarine nor any other spurious "dairy" goods.

Some of the September cheese of 1885, which came here for display at the opening, have been held over, and are doing excellent service. An article in the *Times* of yesterday, by an acknowledged and well known authority on cheese matters, says that their quality is so fine that had they been entered in the year-old class at the great F. & M. show, the English cheese which was awarded first place would have made only a poor "second." And F. & M. is the largest dairy show in all Britain. That I esteem an admission worth the winning from Englishmen. The ill-founded supposition that Canadian cheese would not keep fine flavored till old, because American would not keep is happily being exploded by the bringing to light of simple facts like the forementioned.

The arrival of a second shipment consisting of fancy September cheese, will permit the trophy to be renewed and the arrangements changed once or twice before the close of the exhibition. When exposed they soon take on a very uninviting appearance in this humid climate.

By the courtesy of the Royal Commission, and the efforts of Mr. C. C. Chipman, acting Canadian Commissioner, who has given every assistance in promoting the success of the display, a very suitable separate building has been secured in which to store surplus cheese and butter. At this latter building every facility is enjoyed for the sampling of both by dealers, who come to examine the quality closely.

Letters which I have sent to the leading London papers, and which have been published by the courtesy of such widely circulated journals as the *Daily Telegraph*, *Daily News*, *Morning Post*, *Standard*, *Manchester Guardian*, etc., etc., have helped to remove the prejudices of many, who thought Canadian butter would of necessity be old and musty in flavor, since it could not reach this market quite fresh. These articles excited a deal of interest throughout England, and have brought enquiries from many merchants desirous of making arrange-