supply the factory patrons; and if only such cheese was sold by grocers, the production would have to be greatly extended to supply the home demand. While a pretty numerous class of dealers are urging upon makers that cheese for shipping to England, especially in hot weather, should be scoured down till too hard and dry for the American people, an experience like that of Mr. Gillard's is significant and worth noting.

FERTILITY FROM WHEY.

Mr. H. S. Losee, a Canadian who has for two seasons been using whey as a fertilizer, reported favourably upon the experiment at one of his recent dairy meetings in Ontario. The whey from 1,500,000 pounds of milk worked up at the factory is spouted at a safe distance to avoid bad odours, and deposited in a large vat. From this it is run into a tank on wheels prepared with suitable hose and faucets, and taken to a piece of fallow ground, upon which hogs for consuming the whey are kept, and is there run into troughs and fed. The troughs are moved from place to place occasionally, to distribute the refuse equally over the surface. Feeding on the fallow continues till time to put in wheat in the fall, when the troughs are moved to a lot which is to be fallow the next year, where they are used for the remainder of the season. In this way 150 shoats, fed during the cheese-making months on a ten-acre lot, enriched it with a very high degree of fertility. The whey from every thousand pounds of milk thus fed leaves in the refuse seven pounds of choice fertilizing material, consisting of available nitrogen and mineral matter rich in phosphate of lime and potash. The large liberty the pigs have upon the fallow, and the compartively cleaner condition of the ground, give a better result in pork from the whey fed than when they are kept in smaller inclosures.

WHEN COWS MAY BE KEPT AT A PROFIT.

Dr E. L. Sturtevant has this article in the Springfield (Mass.) *Republican*, which is not only timely, but very instructive:

In every herd of cows there are animals which differ widely among themselves in their adaptability for profit. Each animal has a different digestive power, different tastes, different aptitudes, from every other animal. In one animal increase of food may result in the laying on of flesh rather than increase of quantity of milk yield—or, *vice versa*, one animal may keep up a uniform yield of milk under a considerable change of food, while another animal shall respond in milk yield to slight changes in food. The owner who carefully studies the aptitude of each cow in his herd will usually be able to point out such cows as can be kept profitably on coarse fodders and little grain, and such other cows as can more profitably be forced by high feeding into large yield of milk. As there exists this individual difference between cows in utilizing such food as they obtain, it follows that as a herd is usually constituted, some cows are kept at a profit, and certain other cows at a diminished profit, or perhaps at a loss.

In the fall season, while the farmer is preparing for the winter, it is well to consider the relation between the food stored and the cattle kept, and carefully figure whether the season's crops are sufficient, or more than sufficient, to maintain the live stock already possessed. It is also well to consider whether certain crops cannot be more profitably sold outright for cash than fed on the farm, and whether, in order to do this, some of the live stock had not better be sold before winter closes in.

These two ideas—viz., the differences that exist between individual animals in economy of food and in product, and the changing relations between the values of feeding crops and the animal products—should lead the farmer to a careful study and thought in the autumn, and will usually justify the disposal of certain animals that do not respond profitably to the winter feeding, and such exist in the majority of herds. A milch cow weighing 1,000 pounds is generally calculated to require for her support and profit three per centum of her live weight daily in food, or eighty pounds of hay as its equivalent. As in this region the winter may be considered as of six months' duration, this means two and three-quarters tons of hay. In the six months' pasturing it is difficult to assign a representative value, but let us, keeping on a safe side, for the sake of even figures, calculate the cost of the yearly keep of a cow at three tons of hay. Now, when hay is at a certain cost—that is, possesses a certain cash value—it is easy to figure out the quantity of milk a cow has to annually produce in order, at a given price, to cover the value of the food, thus:

A cow must yield annually to equal the value of three tons of hay consumed:—

When hay is worth	Quarts. at 2 cts.	Quarts. at 3 cts.
$10 a ton	1,500	1,000
15 a ton	2,250	1,500
20 a ton	3,000	2,000
25 a ton	3,750	2,500
30 a ton	4,500	3,000

According to the most recent statistics available, those for 1879, the average value of hay in Massachusetts is $16 a ton. In suburban localities hay is frequently sold at $30 a ton. In New York State the average price is $9.79 per ton. The average price of milk, as deducted from the cheese factory returns of New York State, is about two and one-third cents a quart, as paid to the farmer by the milk contractors for city supply about Boston, from three to three and one-half cents a quart.

We thus have presented to us the question of relations. A cow which consumes three tons of hay a year must give, on the average, in New York State, $29.37 worth of milk, or 1,260 quarts, in order to cover the value of her food. In suburban Massachusetts, with hay at $20, the same cow must yield 2,000 quarts at three cents, in order to cover the value of her food. Now, in New York State the average yield per cow is calculated to not exceed 1,300 quarts, while the yield of good herds is placed at 1,800 quarts. Another deduction, of value to the suburban farmer especially, is that if through the individual aptitude of the cow the 2,000 quarts required to pay for the hay at $20 per ton can be obtained through the use of coarser fodders or changed feed equivalent to $10 a ton for hay, then the superior skill of the chooser and feeder of the cow is equivalent to 1,000 quarts of extra yield.

These figures are but rough illustrations of certain conditions which appertain to dairy husbandry, the methods under which competition and low prices of product are to be met, and the value of intelligent calculation to the farmer.

There are certain facts which in this connection should be well apprehended: 1. That breed is superior to feed; that is, that the animal the fodder is fed out to is of more consequence, under conditions of good farming, than the money value of the food. Feed does not produce milk in the dry cow; high feeding cannot force a scant milker by inheritance into a large milker; the cow of milking habit and strong digestive power can utilize unsalable fodder, and give satisfactory and profitable flow under circumstances when the high value of salable fodder cannot justify feeding such material with the hope of profit. Hence, 2nd, whether we shall feed highly, feed food of high or low value, feed for maintenance or for milk, is a question to be determined by the character of the animal and the relation of values. 3. The cow of profitable aptitudes is the one to keep; the cow of unprofitable aptitudes should be sold off at once, and every herd contains usually more than one, and thus the herd shall be in a condition for the owner to secure profit by studying the value relations between the various unmarketable products of his farm, the various purchasable foods, and the salable products of his growth.

The failure of the crops throughout large regions of our country means high prices this winter for hay, corn, bran, and other feeding articles, and hence the pertinency of this line of thought at the present time. Cattle food will undoubtedly be at a high price; the sale value of milk will probably not be higher than in the past. Whether to feed to the cow and sell the milk; whether to feed coarse fodders, obtain less milk, but at a profit, and sell hay and grain; whether to keep the herd intact or to sell off the poorer cows; whether to meet the present conditions through changed practices—are questions each individual farmer must think out for himself; but the subject will well repay careful thought.

"NEVER milk while the cow is eating," is the advice of a bucolic contemporary. Judging from the character of the milk that comes to market, it would be more to the point never to milk while the cow is drinking.

IN an Illinois cow that could not be satisfactorily fattened, and was consequently sold at a sacrifice, was found "at the small entrance of the stomach" a twelve-ounce ball of "wire, nails and phlegm," the result of having eaten threshed wheat straw, the sheaves of which were bound with wire.

A CORRESPONDENT of the St. John *Globe* warns intending emigrants to Manitoba not to leave their comfortable homes too early, for they know not what is before them in Winnipeg. The cost of living is enormous, and he advises them, if they will go, to bring tents with them or abundance of money to pay the exorbitant charges levied on strangers. Of the land boom he says: "There is, no doubt, large amounts of money being made in land, but it is, in many instances, only for speculative purposes."