kinds will appear. The use of cream that is collected from the farms at infrequent intervals is certain to result in an increased amount of mold butter, unless the cream is carefully pasteurized. One of the tests widely used in the laboratories of the large butter companies as a check upon the work of the operator, involves the determination of the number of certain molds in the butter, a number in excess of a certain standard indicates lack of care in pasteurization of the cream, or in cleansing the equipment.

In the past, and I suppose at the present, many operators have had an erroneous idea of the cause of moldy butter. It has often been thought to be due to poor refrigeration in the creamery, in transit or in storage. It is true that many refrigerators become musty, which is nothing more or less than evidence of mold growth on the walls. Such a refrigerator cannot be a direct cause of moldy butter, but only a contributing factor, since the temperature is likely to be higher than it should be. The higher the temperature, the more likely is mold to appear on the butter. The actual cause is to be found in the vegetative mold and spores present in the cream, and on the tubs, and paper.

The methods of prevention of moldy butter may be summarized as follows: The cream should be collected as frequently as possible, the tubs and paper should be stored in a clean dry place. This will prevent the growth of mold on the cream or on the tubs and paper. It will in no way be an effective guarantee against moldy butter. This guarantee can be secured only by pasteurization of the cream, and treatment of the tubs and paper with hot water or some other mold-destroying agent. The cost of this insurance against loss by mold will be exceedingly small.

THE VALUE OF SKIM MILK AS A FOOD

E. B. Hart

Countless farmers and dairy by-product manufacturers do not realize the feeding value of skim milk, buttermilk or whey. It is not an uncommon occurrence to find the whey tank at a cheese factory emptied into the pasture and its very great feeding value lost. With barley and whey alone pigs of 75 pounds weight will not only make good growth, but they will make money on such a ration.

It is an axiom of nutrition today that little growth of animals can be secured by the use of grains or grain products alone. Then, you ask the question, how on any farm have our animals grown?
The answer to the question is that the grains are always supplemented with milk when the animals are young and with milk, hay or pasture when the animal is older. Today the commercial packing industry is furnishing a third class of efficient grain supplements namely, tankage for swine.

We seem therefore, that either one of these three supplements, dairy products, tankage or the leafy portions of plants must be used with any grain if continued growth is to occur. But we are not looking for a moderate rate of growth; we want the cheapest and the most rapid rate of growth that can be secured for a unit of food material consumed. Such materials as the grains plus alfalfa, clover, or the leafy parts of plants will give continuous and vigorous growth, but it will not give the most rapid growth. The reason for this lies in the poor quality of the proteins of a mixture like barley and clover. When we add to a grain alone or a mixture of grain and clover the dairy by-products like skim milk, buttermilk or whey, or the commercial product tankage we have so greatly improved the quality of the protein mixture that a maximum rate of growth will result.

In milk producing sections the main reliance for a good protein concentrate should be placed on the dairy by-product. A ton of tankage costs $125. On the basis that milk by-products are as good as tankage—and for growth they are better—100 pounds of skim milk or buttermilk would be worth 60 cents. On the basis of the old rule of half the market price of a bushel of corn the value of 100 pounds of skim milk would be about 70 cents. On the basis of pig feeding trials at the Wisconsin Experiment Station the value of skim milk was 80 to 90 cents per hundred when hogs were selling at around $20 per hundred. These figures are mere suggestions and cannot represent the real value of skim milk in feeding. A man on a dairy farm and without tankage has no other possible material except skim milk with which to supplement his rations and meet the normal growth impulse of his young stock. The value of whey can be rated at approximately 60 per cent of that of skim milk or buttermilk. While whey has very little protein yet what it has is of wonderful supplementing character and will turn a failure with a grain mixture, such as barley and oats into a real commercial success. Perhaps on the basis of actual feeding results it should be given a much higher rating. Both scientific evidence and practical experience testify to the great feeding value of dairy by-products when fed as supplements to grains, and no creamery operator should fail to teach and practice this doctrine, for by such teaching there will certainly arise a better live stock industry.
The cities, condensaries and cheese factories are today offering good prices for whole milk. The temptation to sell all the milk produced on the farm is strong. The effect of this policy on the young stock is also apparent. Maximum growth and strong vigorous animals will not be produced in the same time by the use of milk substitutes. The growth period will be longer. Those sections of our country following the practice of selling all the milk from the farm are not the centers visited by buyers of good live stock. Farmers in our own state and in the center of the cheese industry are learning that it is folly to try to raise good calves without milk. Already they are following the sound practice of reserving a supply of whole milk for the growing calf. The animal is kept on whole milk—eight to ten pounds per day—for from seven to eight weeks and then gradually the supply is withdrawn until at the end of three months a small allowance of milk is still a part of the ration. Even at the end of five to six months one pound daily, or just enough to color the water is still in use. This is a splendid practice and should be the common rule rather than the practice of the few. There are calf meal products on the market that lay claim to a value equal to that of skim milk. As a usual thing the best of these will contain some animal protein and generally it is either milk powder or blood powder or both. These meals are expensive and cannot possibly be as cheap as the products produced on your own farm.

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REPORT OF RESOLUTION COMMITTEE

Mr. R. J. Mott on the Resolution Committee read the following resolution:

Resolved, that we appreciate highly the many courtesies extended to us by the Chamber of Commerce and the citizens of La Crosse in their efforts to make our stay in La Crosse during this convention agreeable, and the thanks of this Association hereby extended to them in recognition of their efforts.

Whereas, the Gibson Ice Cream Company has given the use of their cold storage facilities for the care of the butter exhibit and in many other ways have done what they could to make the Convention a success, therefore be it

Resolved, that the thanks of this Association are due and are hereby tendered to the Gibson Ice Cream Company.

The Wisconsin Butter Makers' Association has a reputation for holding successful conventions and the present convention is no exception