

While this is of advantage to the farmer, it is very disadvantageous to consumers of the beef, for the flesh of a fat animal in every case is much richer in fixed, nourishing material than that of the lean, and it is never good economy to purchase lean beef. It is better to purchase the poorest part of a fat animal than the best of a lean one. The best piece of a fat ox (the loin), contains from twenty-one to twenty-eight per cent. more fixed material than the corresponding part of a lean one; and curiously enough the worst piece in the lean animals (the neck), is the richest in nourishing material. The flesh of the neck improves very little in fattening, hence, economy considered, it is the best portion to purchase, as its value in a measure is a fixed one.

Care of Stock.

Farmers who look after the comfort of their cattle but rarely suffer pecuniary loss by disease or death. In the stable cleanliness and ventilation are, with an occasional currying, the important requirements that promote health. Experiments have proven that cows in milk and old oxen retain their condition in confined and warm quarters during winter, while animals under three years thrive better in a well-sheltered yard with shed attached, the floor of which should be covered with dried leaves or refuse straw, which would afford them a resting place during the nights. Leaves make an excellent winter bedding, and every farmer should have a supply on hand to renew the beds from time to time. A shelter from the rain and snow and north-easterly winds is the only protection the younger animals require during the inclement season, as their blood circulates more freely than that of the older cattle, and they possess greater powers of endurance.—*German town Telegraph.*

Windows in Stables.

The matter of windows in stables is one of vastly more importance than some farmers think. Animals, no more than vegetables, can thrive in the dark. Our long winters are sufficiently trying to the constitutions of our farm stock, under the best circumstances, and an animal upon which the sun scarcely shines at all for five or six months will come out in the spring in a bad state of health, even though the feed, ventilation and temperature have been all right.—*Plowman.*

An Englishman, speaking of some fine cattle, says: "They were evenly fleshed all over, and the meat of that texture which shows steady, continuous feeding from infancy, and not a hurried case of blubber wrapped around them in six weeks, as pigs are Indian-corned against Christmas." A strong way of putting it, but true nevertheless.

Cooked vs. Raw Corn.

At this time, when my brother farmers are feeding their corn without stint to their porkers and bees, a few words in regard to my own experience may not be without interest.

For two months past we have been using the Eureka steam cooker, and I very much regret that we have not the scales and all the requisites for making an accurate test of the comparative merits of cooked and raw corn, both in the kernel and ground. But we have not; therefore I can only relate our experience as it has been. Before using the cooker we shelled the corn and fed it to our pigs raw, giving them all they could eat, taking notice of the amount fed, and also of the progress made in fattening. We then commenced cooking corn (thoroughly) in the kernel, and found that (although one bushel of dry corn would make two bushels of the cooked) our pigs would eat only about the same amount of the cooked corn, and we are confident they are putting on flesh quite as fast as when they were consuming double the amount of food. We take the water (which contains a large amount of starch) from the base of the cooker, and mix it in the swill barrel with their drink, adding a little salt. One of my neighbors informed me that he was feeding twelve hogs, and they consumed fifty-six baskets of ears, or twenty-eight bushels of corn per week, whilst we were cooking nineteen and a half bushels of shelled corn per week, and with it were feeding ten fattening hogs, a two-year-old beef and eighteen store pigs. I will not prolong this article by making any comments, but let farmers and all who feed stock make their own estimates.—*J. A., in Michigan Farmer.*

The Effects of Crossing.

A report which appears in a recent copy of the *Gazette*, (Eng.) descriptive of the farm stock in the Gowran farm, contains the following statement in regard to the plan for improvement by crossing:

The following, briefly, is the principle adopted in the herd: Heifers are bought, the best that can be procured, and these are then placed to a Shorthorn bull of the first class. The calves are allowed to run with their dams and then fatten off the following spring. The heifer calves are reserved, and the bullocks kept till two years old and then fatted off. The effect of a good Short-horn bull is wonderful, and Gowran young stock are simply models as paying farmers' cattle. The crops this year, it is allowed, are nowhere very good, but great credit is due the steward for the extraordinary cleanliness of the farm. Though the turnips and mangels are nothing remarkable there was not among them a weed to be seen.

Dairy.

Skim Cheese as Food—The Measure of its Value.

BY L. B. ARNOLD, SECY OF THE AMERICAN DAIRY-MEN'S ASSOCIATION.

A cheese-maker closes a letter as follows: "A chemist recently stated in a public journal that 'the value of a food is measured by the amount of albuminoids it contains, of which casein in cheese is one,' and that 'as skim cheese contains more casein than whole milk cheese, it is worth more than whole milk cheese for food.' Is this sound? I do not believe it is, but I cannot tell why. A little light on this point would be very acceptable."

Thinking the answer to the foregoing would have something of public interest, I send it to your journal.

It is a very common way of estimating the value of foods both for men and animals to measure them by the per cent. of flesh-forming material they contain, but though generally true, the rule is not infallible. Availability and the accompaniment of the albuminoids greatly modify the value of particular foods. To illustrate: We require oxygen in the air we breathe to revivify our blood. It is not enough for this purpose that we take the requisite amount of oxygen into our lungs regardless of its condition. It must be in a free state and unfiltered by any other element. If we are placed in an atmosphere of carbonic acid, although it contains as much oxygen as the air we breathe, we can make no use of it. The oxygen will not let go of the carbon with which it is united to combine with blood, because its affinity for carbon is stronger than it is for blood. While inhaling the needed amount of oxygen, we would die as soon in an atmosphere of carbonic acid as we would in a vacuum, because we could make no use of the oxygen in the acid.

Carbon is a supporter of animal heat and a source of producing fat, but the value of a food for these purposes cannot be measured by the amount of carbon it contains. Availability must be considered here. If it is in the form of fat, sugar, starch or gum, we may appropriate it readily. But if it is in the form of woody fibre or charcoal it will be of no use to us, because it is locked up in compounds too tenacious for our stomachs to unloose. An ostrich may keep warm by eating charcoal, or a mule by eating woody fibre, as they respectively have the power of digesting these substances, but for man and most other animals they are absolutely indigestible.

So with albuminoids, otherwise called flesh-forming food. With them availability must also be considered. Potatoes, as shown by analysis, contain food enough to sustain the human body, and if cooked they will support life for some time. But if we take them raw we would starve, though

an ox might grow fat on them. The circumstances under which albuminoids are presented must be taken into account as well as the fact of their presence, and this item is all important in a comparison of whole milk and skim cheese, as we ordinarily find them.

When milk has been coagulated with rennet, the whey separated, and the coagulum pressed, the curd thus formed is insoluble in water or such acids as the human stomach contains, until it undergoes the cheesy fermentation or meets with an alkaline solvent, when it will be soluble in water and be rendered digestible. If curd is eaten before it becomes cheese, it does not dissolve in the stomach unless it lies there long enough to become cheese, which it may do. Though we know that the cheesy fermentation is hurried on rapidly in the stomach, curd does not appear to stay there long enough to complete its cheesing, but is pushed along into the duodenum and onward while it is yet in its curdy condition. The duodenum and bowels following are lubricated with an alkaline secretion which, to the extent of its alkalinity, may dissolve the acid curd. But this, especially in feeble persons, is often not strong enough to dissolve the curd, and it passes along, leaving the body in the same condition in which it entered. And what is worse, the curd, by taking up or neutralizing the alkaline secretions with which the duodenum and lower bowels are naturally lubricated, produces constipation—an effect which is very sure to follow from eating green or partially cured cheese, but never from using such as is fully cured and ripe. When curd is completely converted into cheese, it is as easily and perfectly digested as bread, and instead of producing constipation, it operates as a laxative and is as wholesome and twice as nutritious as beef. In this condition its value as food may be measured by its albuminoids, or casein. Strictly speaking, it is not even then a perfect food. It is lacking in respiratory matter to the extent of the loss of sugar carried away in the whey. But as flour and most of the other food we use has an excess of that kind of matter in the form of starch and sugar, the defect in cheese is made up without expense and need not be counted. It has, in fact, the advantage of acting as a corrective for the excess of starch and sugar which exists in pastry and many other kinds of food we consume.

If skim cheese could be so made and treated as to be completely converted into cheese, its value might also be measured by its albuminoids or flesh-forming matter, but not otherwise. The misfortune of skim cheese is that it generally undergoes very little cheesy fermentation, owing to defects in its manufacture. It spoils either by drying down into a "white oak" stiffness, or if too moist for that, it rots with a sweetish and sickish-tasting decay. It is generally consumed in the form of dry, hard and sour, tough and uncured curd, in which condition, besides its tendency to produce constipation, it is as indigestible in the human stomach as raw potatoes and just about as useless as human food, no matter how much casein the chemist may find in it.

A recent examination of the milk sold in Chicago by a prominent physician and chemist, elicited some facts as to the adulterations of milk in the city. After analyzing a large number of samples of milk sold to various hotels and in different quarters of the city, it was found, without exception, not only deprived of its cream, but also watered. Estimating the whole from these average samples, he declares it as his opinion that the best milk sold in the city is about one-fourth added water, from one-half to all its cream taken away, and but one-fifth of the whole genuine milk.