

at an opposite opening. Good butter can never be made in a filthy apartment, where there is offensive effluvia arising from anything, no matter what.

4th. Cream ought to be churned every day; yet, if one can provide a clean corner in a cellar or milk-room, clean and cool, and keep the pail on a clean piece of flagstone, he can make superior butter by churning twice a week, providing the temperature of the cream is maintained from day to day from 60 degrees of Fahrenheit.

5th. Always skim the milk soon after the cream has risen. Thousands of barrels of cream are ruined for making yellow butter, by not skimming the milk soon after the cream has risen. The sooner the cream is removed after it has risen, the better the butter will be. Milk which should be skimmed at evening is frequently left till the morning, when the cream will be injured to such an extent that yellow butter cannot be made from it at all, neither will it make as many pounds as if it had been skimmed at the proper time.

6th. Let the churning be done by a person whose hands and clothes are as clean and sweet as a blossom of red clover; and let the churning be continued until the butter has come. It is ruinous to butter to put cream in the churn, as is sometimes done, and churn rapidly for a minute or two every hour of the day, then in the evening all take hold in turn, and keep the cream dashing and splashing until midnight. If the cream is properly managed, butter will always come beautifully in less than half an hour.

7th. The butter should be worked and thoroughly salted soon after it is churned. There is but little danger of salting too much. One ounce per pound is not enough for butter that is to be shipped any considerable distance. It is ruinous to the grain of the butter to throw it into a dish pan and knead with the hands. The best instrument for working out the butter-milk is anything that will cut deep gashes in the butter, into which butter-milk will flow. The next day after churning the butter should be worked again and packed. A great many persons continue to work and knead their butter to its great injury after the butter-milk is removed, thinking that all the "crystal tear drops," which are not butter-milk, must be worked out.

8th. Thousands of tubs and firkins arrive at the gre-t marts containing what was once prime yellow butter, but which was spoiled by being packed before the tubs had been prepared by being soaked in brine. For the sake of saving a pennyworth of salt for preparing a strong brine in which to soak a firkin two or three days, many a frugal housewife has been obliged to accept half the price of prime butter, simply because the staves were not saturated with brine before the butter was packed.—X. in *Scottish Farmer*.

INFLUENCE OF FOOD.

All manner of food can be chemically resolved into oxygen, nitrogen, hydrogen, and chlorine gases, carbon and certain mineral and metallic matters, and it is the proportions in which the substances are combined which determine the value and characteristics of the different foods. Thus a substance containing a large amount of oxygen and silica, which is silicic acid, it is evident would not be a very valuable food for man or beast, because that substance enters so slightly into the human system, yet the same material might be of great value as a food for plants, because the silicic acid is necessary to their stalk growth. On the other hand, we may have two substances both containing large quantities of nitrogen; the one will be an excellent and delicious food for man, while the other would be disgustingly offensive to taste and smell, yet would be invaluable as a plant food. Hence we see that it is not alone the chemicals of which a material is composed, but specially the manner of their combination which gives their value, and we cannot determine their effect upon the animal economy by their chemical constituents. The influence of food, then, can only be determined by its actual effects upon the creature to which it is given, and it is evident that in such feeding we should take into consideration the nature of the animal fed. In the German experiments which have been so often alluded to of late, we think that the sole study has been the chemical constituents of the food, and no attention paid to the animal.

Every farmer of any thought or observation knows that different breeds of cows have characteristics and qualities entirely different, and there is often a difference among those of the same breed. No one would think of choosing the little, lank Jerseys for beef cattle, yet for rich, creamy milk, they would be the first choice. The food which in another breed, is secreted into fat, is in them turned into cream, and no matter what that food may be, the constituents in it are thus converted. That wonderful human laboratory, the stomach, performs its functions as designed by nature, extracts the available matters from the food, and converts them into just whatever nature has designed should be a prominent feature of the animal. If the food be of such character as to suit the peculiar feature of the animal, then

the process is easy; but if it is not, then by some process or effort nature supplies the deficiency—if long continued, like all other strains upon vital force, at the expense of yield and good health. Had that period of the German experiments embracing mere dry hay been long continued, there would certainly have been a giving way of the strength of the animal and a decrease of the milk, or, at any rate, of its richness. The change from flesh-forming to fat-forming foods could not have any effect, as whatever the nature of the cow she would assimilate the one as quick as the other in that particular line which was her prominent characteristic. We look upon the German experiments, as we have them, as very imperfect, yet at the same time very forcibly illustrating the statement we have made.

Certain foods contain subtle essences and flavors which have been formed in the chemistry of their growth. Some of these are so intensely pungent that they go through all the stomach without change, and come out into milk or other secretions. Hence, care should be exercised in feeding every character of stock that these strongly flavored foods are avoided, if it is desired that the products of the dairy or the poultry yard be of first class quality. The flavor of wild onions has been known to go through even into butter and cheese, and the feeding of chickens upon pork scraps may be carried to such an excess that the eggs will be decidedly flavored. Thus, too, the cause of milk sickness is distilled through the animal economy into that concentrated essence, the milk, and also permeates the flesh, so that he who drinks the first or eats the last will be poisoned, while the animal itself is not at all affected. Thus food, injudiciously chosen, may be the vehicle of hurt instead of good, of disgust rather than pleasure, and hence the necessity of carefully selecting proper food, wholesome, nourishing, but devoid of offensive odors; and of carefully observing the effects resulting from causes known to exist or matters known to have been used.

We have further the influence of foods upon animal growth and health, and upon the increase of quantity of the secretions, whether or not the quality be affected. It requires but little thought for any one to know that green foods, containing large amounts of water, must increase the flow of the secretions, and whether they increase or decrease, the amount of cream in milk must increase the amount of milk itself. At the same time these green foods have not the tendency to give that permanent and solid fat desirable in the beef market; it must be remembered, though, that green foods differ in their characteristics and properties, exactly as do the dry matters, and that in relative proportion they will accomplish the same ends, but the cattle which have gathered size on the green food are benefitted with solidity by a period of grain before being led to the butcher. For the proper understanding of the influence of food we must first study the constituents of that food, and then the physical peculiarities of the animal to whom we wish to feed it; by this double adaptation the end we wish to accomplish will be made perfect.—N. Y. *Weekly Times*.

NEW CHEESE FACTORY.

The farmers of Mariposa appear to appreciate the advantages derived from cheese factories; and it is desirable that their example should be followed by other townships. We learn that Mr. John Rogers is making preparations for establishing a factory on the 7th line of Mariposa, where he has a splendid neighborhood for carrying on cheese making on a pretty large scale. Messrs. Bertram Bros. are now making for him two large vats, each having a capacity of about 450 gallons, and the necessary supply of milk cans. The same firm are also making a vat of about 400 gallons for Mr. Cruse's cheese factory.

These home industries afford gratifying evidence of the progress of this section in this particular line, and show how different branches afford mutual assistance. The vats are superior specimens of workmanship, and are admirably adapted for the purposes intended.—*Lindsay Post*.

PACKING BUTTER FOR WINTER USE.

At a meeting of the Bucks Co., Pa., Agricultural Society recently, an essay was read by Miss Kate Craven, of Newton, in response to the question, "Can butter be packed to advantage in June or July for winter use?" The essayist was decidedly in favor of packing butter in early summer, when the price is usually so low as to be unprofitable. If properly put up then it cannot be surpassed. It must be fresh and good or it will not keep well. Her recipe is:—

For twenty pounds of butter take one and a quarter pounds of salt, one ounce pulverized saltpetre, and a small quantity of white sugar, which should be worked into the butter and left over night. Next day work again, make into lumps, put into a stone vessel, and cover with brine strong enough to bear an egg. Lay a bag filled with salt in the vessel and replenish when empty. Do not remove the butter long before it is needed.

Correspondence.

The Editor gets Hauled over the Coals on the College Question.

MR. EDITOR,—

I thought I would write a few lines regarding the Model Farm, since you have kindly offered to publish an article even contrary to your views. I am extremely sorry to differ with you, and that conscientiously. I had hoped that persons wishing for the same end would agree in the general means of attaining that end. I have no interest in the Model Farm more than any other man. Your arguments I consider wholly insufficient to establish your views. There has been only one argument, worth anything, brought forward, and that is "Rideau's" statement that he never read of Agricultural Colleges in England or Scotland, where agriculture is carried on next to perfection.

You do not consider that the Model Farm would do any good to the farmers. To the present farmers who have one foot in the grave, I admit its benefits would be but slight; but take the rising generation of farmers, who are to fill their fathers' places, and I see it in a different light. Boys are growing up on the farms with nothing but a common school education, and a great deal commoner farm education.

Their fathers having exhausted their farms, die and will the farm to one of the boys. What is that boy to do with a poor (once good) farm? His father, one of those who always opposed the education of the farmer and thought to know how to plow and sow, reap and mow, was all that was required for a farmer, barely lived with all his experience and whimsical moon knowledge. He takes an agricultural paper. Some writer says do this, another says do that, without giving any reason.

Now, Mr. Editor, if that boy had an education such as an Agricultural College could bestow, he could weigh the advice of those writers as regards his case, if he could not suggest a remedy himself. We have had enough of this doing so because father did. Let the farmer understand the principles upon which his business is based, and then advancement will appear in far more glorious colors than ever. I can give you two instances in which, if more knowledge had existed among the farmers concerned, thousands of dollars would have been saved. Both cases happened near Brantford, and the results of ignorance are there as a monument to this day. One was the introduction of the trench plow into soils containing an excess of iron compounds; the other was the introduction of a new grass, highly recommended, the common name of which had been hidden by some enterprising man, which proved to be Couch grass.

Now, Mr. Editor, had the knowledge of Chemistry in the one case, and Botany in the other (sciences which you nor any other private enterprise firm could teach), been universal or only exceptional among those farmers, would not the evil results have been averted?

You talk about aiding Farmers' Clubs. What aid do they want? They are self-sustaining where men of right principles exist to manage them. About one-tenth of the farmers of Canada would join Clubs. The remainder see no use in such institutions, and if they can see no use in Clubs, how can they be expected to see any good in an Agricultural College, an institution which is a thousand times higher than the Club, than the Club is above those who will not join it. This is where the majority of farmers comes from who oppose such an institution.

You say that thousands of experiments are made every year. I can say yes to that with all my heart (every farmer is experimental, but nine hundred and ninety nine out of the thousand are not worth the printing. They may be worth something to those who make them, but to farmers living ten miles away they are

good for nothing, because nothing is known of the conditions nor of the exactness with which the experiment was performed.

Look at the meaning farmers put upon the word loam. Loam with them includes every soil. "What sort of soil is your farm?" you ask. "Oh, its a nice, loamy soil," or a 'light loam,' or a 'heavy loam,' or a 'black loam,' as the farmer may think! That word loam is of no use to common farmers.

Now, I shall consider the articles written by correspondents. As far as "An Old Farmer's" article is concerned, there is no argument in it. He simply feels sore because a Government is in power in Ontario of different political principles to himself. Hence he tries to harrow up little personal slanders as low as the late candidates tell on each other when on an electioneering campaign.

Mr. Kernigan is a little more reasonable. But how could you teach Chemistry to children in common schools, without chemical experiments? Let him study a little chemistry himself. Take the element, oxygen. The book tells him it is a gas, supports life and combustion, &c., &c., but before he gets learned what nitrogen is he forgets all about oxygen. But let him see the experiments performed proving these statements, and he will become interested and love the science and crave for more knowledge.

"Rideau's" illustration of the cow just condemns his own views. Of course every fool knows that if you "milk" a farm and return nothing, the farm will soon run dry. However, a good many fools have tried the experiment. Every fool, though, don't know what is wanted on the exhausted farm to restore fertility. The Agricultural College will be able to teach the renewal of exhausted lands. The trouble, however, will be, farmers will expect to restore in two or three years what it took them twenty years to exhaust. How unreasonable, therefore, for present old farmers to expect to see their money back in the few days they have to live. If it took twenty years to exhaust, surely it will take twice twenty years to restore fertility and make the farm pay its way at the same time.

If there are no Agricultural Colleges in England that is no argument that there should be none here. A few years ago there were no cheese factories in England, while there were hundreds here. Did that prove the factory system a useless scheme? No. But what do we see? Why England is working into the factory system, and even sends for Americans to manage their factories.

The best farmers in England, those who have done most to advance farming, are men of good education. I would cite Mr. Mechi as an example. The same is the case with Americans. Prof. Mapes, John Johnston, George Geddes, Harris Lewis and others are men of learning. Agricultural papers are a great aid to farmers, but alone they are but a mite to the farming community. They profess to advance the interests of farmers only, but do they not also advance the interests of manufacturers and sometimes swindlers? They will not barely expose every swindle, neither will they show the demerits of every machine they advertise. They will not even publish an article written by a farmer (who has been swindled) against a swindle for fear of spoiling the business of the swindler.

Chemistry the only science useful to farmers. How preposterous! All I would say is, name a natural science that does not bear upon agriculture. Finally, if young men will not attend the Agricultural College, that is not the fault of the College, neither does it prove the College to be injurious.

I hope, Mr. Editor, that I have not been too long. Having four writers to answer, considerable space was required. Those whose views I oppose have written sharp and, I trust, conscientiously. I also have written pointedly and truly conscientiously,