

abominable stuff some people call butter, but which is really unworthy of the name.

Perhaps the most important thing in connection with butter making, and that which should be constantly before the mind, is absolute cleanliness throughout the whole process. From the time the milk is drawn from the cow until the butter is put up in rolls for the table, nothing of an impure nature should come in contact with it; failure in this respect is failure everywhere, for however careful we may be in every other particular, a want of cleanliness will spoil it all. Another thing which requires particular attention is to skim the milk at a proper time. Many injure their butter by allowing the milk to stand too long after the cream has risen; it should be skimmed, if possible, as soon as the milk begins to thicken on the bottom of the pans. The milk should be skimmed morning and evening, in the summer, and once a day will do in winter. The cream should be thoroughly stirred after each skimming, and churned not less than three times a week in warm weather, but twice a week in winter. People differ in the opinion of washing butter, but we have come to the conclusion that it is better without being washed. The buttermilk should be well worked out of the butter before the salt is added. The quantity of salt is a matter of taste. It should then be set in a cool place for twenty-four hours before being worked and made into rolls or prints for the table or market.

One thing I forgot to mention is the care of cows. No cow can furnish an abundant supply of good, rich milk, unless she is well fed with good, wholesome food, and furnished with a plentiful supply of pure water; give her these and she will give good, pure milk, either in summer or winter. I regard it of the utmost importance that cows should be well wintered. Many people greatly err in this respect; they seem to think that if a cow comes out alive in the spring, with perhaps a little to spare, that is all that is required; but the truth is, if a cow is well wintered, she is worth nearly as much again than if she were half starved. With regard to the time that cows should go dry, I have changed my opinion somewhat of late; I used to think six or seven weeks long enough, but I now consider that ten or twelve weeks is better. I think a cow will give as much milk in the year, and have better general health by being dry that long. With regard to making butter in winter, I think, with proper care, very nearly as good an article can be made as in summer. In order to do this, the feed of the cows should be made to approach as nearly as possible to the grass in summer; this can be done by feeding early cut clover and corn-stalks cut while perfectly green and nicely cured. Then, if you have a room where you can keep the milk free from getting tainted from articles that are being cooked, etc., and also where you can keep it at nearly a uniform temperature, there is no difficulty in making excellent butter in winter. As to whether butter making pays or not, that depends altogether upon management. To keep poor cows, and make a poor article of butter, such as will only bring the lowest price in market, evidently will not pay. But to keep good cows and make first class butter that will readily sell at the highest prices, pays all the time. Then the question arises—what is a good cow? In answer to this I would say, a good cow is one that will make from 180 to 220 pounds of butter a year. I have cows that make considerably more than the highest figure mentioned; but let us take the lowest and see how we come out; 180 pounds at 25c. a pound gives \$45 for butter, and the sour milk is worth \$10, to say nothing about the manure. I have not time to go into particulars, but I hold that a good cow is worth \$50 a year, and to keep such cows will pay very well. Perhaps some of you may think I have placed too high an estimate on the sour milk, but from my own experience and from the experiments of some of my neighbors, carefully conducted, I am satisfied I have not valued it too highly. To illustrate this, let us suppose that I have four cows; allowing each one to be dry three months in the year, I am milking on an average three cows all the time. If, now, I take three pigs, well bred, five or six weeks old, worth \$2 each (and I can raise them for that), in ninety days more I can turn off three more, and so on, thus making 1,200 pounds of first class pork in a year, which at 7½c. a pound, gives \$90; deducting from this \$24, the price of pigs, and \$26 more to purchase shorts, we will say will leave me \$40 for sour milk from four cows; \$26 will get 26 cwt. of good feed, which will allow over 2 cwt. to each pig.

Bots in Horses.

The larvæ of the gad-fly find a temporary habitat in various parts of the bodies of higher animals. One variety, the *Estrus equi*, passes part of its life in the stomach of the horse, where it finds the conditions which are favorable to its development until it is ready to assume the chrysalis state. The time which is required by the larvæ to attain their growth is probably about nine months. As they are introduced into the stomachs of herbivora during seven months of the spring and summer, it naturally happens that an equine stomach is seldom examined without some of the larvæ being detected adhering to the mucous membrane, or that portion of it particularly which is not concerned in the preparation of the digestive secretion the gastric juice.

Bots cannot properly be called worms, nor are they, in the proper acceptance of the word, parasites. Their residence in the internal organs is temporary, and at the proper time they quit their hold of the digestive membrane, and are expelled along with the feculent matters.

There is no difficulty in accounting for the presence of the bot in the stomach; in fact, the horse regularly infests himself by swallowing the eggs which the parent deposits in various parts of the body, especially in the legs, while the animal is feeding in the pastures or travelling along the road. Probably while the horse is confined to the streets of the town he is comparatively safe, but few animals go through a summer without entering a suburban district, and half an hour in the green lanes will suffice for the deposit of numerous eggs, which will afterward be swallowed, enter the stomach, and there become hatched into the larvæ, which quickly grow to a considerable size, some of them being nearly an inch in length. A smaller variety, which is of a bright pink color, is sometimes found, but there is nothing in relation to the peculiarities of these larvæ, as compared with the common kind, which has any significance in a veterinary point of view.

An important question for the veterinary pathologist is—Are bots, during their temporary residence, usually or occasionally injurious to their host? And are there any means of expelling them? To the first question the reply is a general negative, but there are a few instances on record in which the larvæ have been so numerous and have made so many notes in the coats of the stomach, that the integrity of the viscous has been destroyed, and the horse has died from rupture of the organ. Such cases are, however, extremely rare.

At different times we have been called upon to investigate instances of alleged death from the presence of bots in horses' stomachs, but in the majority of cases causes of disease altogether unconnected with the existence of larvæ have presented themselves. In one remarkable case a number of horses had died in succession from an obscure malady, the nature of which could not be defined. The animals fell off in condition, refused food, and ultimately died in an extreme state of emaciation. It occurred to some to open the stomach of one of the animals, and, finding a number of bots attached to the lining membrane, it was at once concluded, without any hesitation, that the cause of the fatality was discovered, and the only question which remained to be investigated was the best method of getting rid of the pests, and thus preserving the lives of the other horses in the establishment.

A careful enquiry was meanwhile made into the circumstances of the animal's management, the result of which was to establish the fact that the fatal disease was in reality blood poisoning, due to the use of provender of a bad quality. No attempt was made to expel the bots, but a total change in the system of feeding was ordered, and no further attacks were reported.

In all instances where disease is apparently attributable to parasitic invasion, it is well to remember that other causes of disease may be present. The tendency to look upon worms of all sorts as the authors of any mischief which may have occurred, is likely to lead to wrong conclusions in the minds of unscientific inquirers.

As to the treatment of bots, it may be stated that no agent has yet been found to cause them to quit their hold of the membrane. Some remedies having been given at the time when the larvæ happen to have attained their full development, gain the undeserved credit of causing their expulsion, but experience goes to show that no treatment is necessary, and none is likely to be effectual, even if it were necessary.—*London Agr. Gazette.*

Corn as Fodder for Stock.

The following is the experience of several prominent American farmers in feeding stock on green corn fodder. One New York State farmer says:

"Last year, though I was short of hay; July 4, I sowed an acre of corn for fodder, three bushels of seeds, eight rowed yellow, and rolled the ground after harrowing. October 1, a man with a corn cradle cut it in one day, and it lay in swath one week (if very dry weather three or four days would be sufficient). Two hired men then bound and set up in one day in shock, tied nicely at the top. There was on that acre 1343 bundles of fodder as large as a man could reach around and bind. I let it stand there until the ground was frozen, when I found it to be dry and fit to go into the barn, where I packed it with straw in alternate layers. Every bundle came out as bright as the day it was bound. I fed seven cows, three head of young cattle and one span of horses until the first of February on that one acre of fodder. The cows gave as much milk while the fodder lasted as at any time in October on after-grass. The horses did better on it alone than when fed twelve quarts of oats and hay per day. I have as good a river-bottom meadow as there is in the County, and I think the acre of fodder was worth more to me than four of the best acres of meadow. Observe the following rules and I warrant success: Sow broadcast small yellow corn, roll the ground, wilt the fodder, bind when dry four or six bundles in a shocktie nicely at the top, let stand until cured, feed out in the field if convenient, or pack up in the barn with straw."

Another farmer in the same State gives his experience, as follows:

"I keep a dairy, and for three years past I have used sowed corn fodder for winter feed with satisfactory results. I am at this time milking 16 cows most of which have been milked constantly since last spring, and my average flow is 120 quarts per day. I have not fed a forkful of any fodder but sowed corn since they came to the barn, about the first of November. I used about two bushels of buckwheat bran or shorts each day; sometimes brewer's grains in place of shorts, in which case I double the quantity. This amount is divided among the whole herd. My stalks are fed in bundles as they come from the field (uncut). After the cattle have picked them over for an hour or so, I mixed the shorts in the form of a mash, and put it on the stalks remaining in the mangers, the most of which they eat, leaving only a few of the coarsest of the butt. The stalks are most of them fine. My stables are warm, and the mangers tight. The cattle remain in through the day except about two hours, when they are let out for water, and are in fine condition. It must be remembered that it takes much heavier feeding to produce milk than to keep dry stock."

I sow the seed with a drill, five rows at once, 18 inches apart, and use three bushels of (Western) corn to the acre. The ground should be well prepared; nothing further needs to be done until you harvest the crop. The past year I began to sow the middle of May, and sowed at intervals until the last of June. That sown about the first of June produced the best and most feed. I commenced to cut about the middle of August, and cut at intervals until the first of October. I lay it in swaths to wilt about three days, then bind in small bundles and put up in small stacks with bands, leaving the top open for the escape of steam. I leave the fodder in the field till winter, and bring it in in small quantities as required for use. My feed is all bright and sweet, except the outside leaves, which are somewhat bleached. I sowed last spring 26 bushels of corn, shelled. From its product I shall carry a stock of 17 milch cows from the first of November to the first of May, with the help of the shorts as above. I am not saying that it is cheaper or less labor to use corn fodder than hay if you have the meadow from which to cut the hay, but I do maintain that I can carry as much stock on 10 acres of fair crop of sowed corn as can be carried on 38 acres of average meadow.

Gypsum will sometimes prevent disease, and will always contribute to the growth of potatoes. Put it in the hill with the seed, and on the hill when the tops first make their appearance, or when you cultivate the first time. A handful or so is sufficient in the hill, the top-dressing may be more liberal. Ashes and salt are also beneficial, and a mixture of ashes, gypsum, and salt is highly recommended by those who have used it as an excellent fertilizer for growing crops.