

toms as they arise by the use of chloroform, chloral, and such agents as seem to be indicated at the time. Herbivorous animals which have swallowed a sufficient dose generally die, but they are sometimes saved by two or three doses of melted lard, which tends to retard the absorption of the poison in the stomach and also facilitates its expulsion through the intestines.

THE DEATH CUP.

The death cup (*Amanita phalloides*) is the most poisonous of all the fleshy fungi. (Fig. 5.) It is found in summer and autumn throughout the greater part of the United States and Canada, growing upon the ground in the woods at medium and lower elevations. The stem is white. When young it is solid, but afterwards it becomes somewhat hollow and pithy. The base is surrounded by a characteristic cuplike, cup-shaped appendage, the remnant of a veil, which covers the entire plant when young. The length varies from three to five inches. The cap is viscid when moist, and is generally smooth and satiny, but it may sometimes bear fragments of the outer covering or veil. The gills and spores are white. Several varieties of the plant exist, the one most common having a white or yellowish cap, but this may be green or even spotted when growing in deep shade. The general shape is much like that of the common mushroom, from which it is at once distinguished by its basal cup-shaped appendage, and a child can usually distinguish the fly *Amanita* by its more brilliant coloring.

The amount of the substance of this fungus which is necessary to produce death is very small.

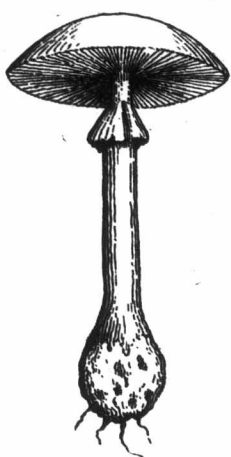


FIG. 5.—DEATH CUP (*Amanita phalloides*).

The third part of a medium-sized uncooked cap is said to have proved fatal to a boy twelve years of age, and smaller amounts have affected older persons very seriously. Even the handling of specimens and the breathing of the spores have apparently given rise to very pronounced uneasiness.

The fresh fungus is very inviting in appearance, and has no bad taste when eaten either raw or cooked. There is no uneasiness felt by the victim until from nine to fourteen hours after eating. Severe abdominal pain then sets in, which is rapidly followed by nausea, vomiting, and extreme diarrhoea. These symptoms are persistently maintained, but without loss of consciousness, until death ensues, as it does in from two to four days. Its characteristic action consists not in inhibiting the action of the heart, but in dissolving the red blood corpuscles and permitting the blood serum to escape through the alimentary canal.

The illustrations appearing in this article are reproductions from the Year Book of the U. S. Department of Agriculture, from which the article was compiled.

Spraying to Prevent Potato Rot.

A recent commission appointed to inquire into the state of the potato crop in Ireland gave a report as follows: "The condition of the crop was somewhat similar to that of 1894, and upon investigation they found that the disease *Phytophthora infestans* was confined almost altogether to districts where the land was low, wet, and badly under-drained. The effects of the wet weather was not the only cause of the rot, however, as it was seen that upon land on which a proper rotation of crops was not practiced the disease was also prevalent. On light, dry soils the crop was fair, and it was considered that the drier the climate, the better system of cultivation, the change of seed, and the due observance of the rotation of crops were the causes to which the safety of the potatoes in these districts may be principally attributed.

"There is one point which is worthy of notice. In one district portions of plots were still green, and the tubers, although small, were in a good condition. Enquiry elicited the fact that the potatoes had been sprayed with Bordeaux mixture, which appeared to have prevented the disease." This knowledge is of great importance to the people of this country, as this disease has been the cause of the loss of large quantities of potatoes every year, and this season's crop is no exception. There are numerous maladies that affect the potato crop, but the one we have usually to deal with is known as "*Phytophthora infestans*." It generally affects the tubers rather late in the season, and its attack is frequently sudden and fatal. The tubers are commonly affected with rotting, and producing during the process a foul smell. This disease is most destructive during warm, moist weather, at such times spreading very rapidly. It commonly begins as a single spot on a leaf, from which it spreads throughout the plant. This disease can be prevented by spraying several times during the season with the Bordeaux mixture.

WM. RENMUTH, Colchester County, N. S.:—"We all like your paper very much, and would not be without it."

DAIRY.

Dairy Development.

- 1.—At what time of the year do you prefer to have your cows calve?
- 2.—Describe your treatment and feed of heifer calves intended for dairy cows from birth to maturity. In summer do you let the calves out on pasture or keep them up in light, roomy, cool stable boxes away from flies and scorching sun?
- 3.—At what age do you prefer heifers to drop their first calf?
- 4.—What are your best cows doing in return for care and feed? Do you use the Babcock test?
- 5.—We would be pleased and feel sure it would greatly benefit fellow laborers to have you describe in detail your method of buttermaking from the time the milk leaves the cow till it is shipped to the consumer.

The Individuality of the Cow Determines Her Own Usefulness and Largely that of Her Offspring.

- 1.—From 1st September to 1st January.
- 2.—First two weeks whole milk fresh from cow; third week one half separator skim milk, balance whole milk, afterward all skim milk; keep some of the best hay before them; a convenient feed box, in which is put oil meal and bran in the proportion of one pound to eight, all they will eat up clean every day. They will begin at about a week old. If given all they want, they will not eat too much. We keep them in a roomy box in stable until they are at least five or six months old.
- 3.—At two years old.
- 4.—Thirty-five to forty pounds milk per day, testing 4 to 5 per cent. butter-fat. Yes, we use the scales and Babcock tester.
- 5.—Milk aerated and separated while warm from the cow; cream cooled at once and kept cool until enough for churning is gathered, then ripened; churned at 55° to 60°, according to temperature of weather and room; washed, salted one ounce to the pound in churn; stand about two hours, worked, printed, wrapped in parchment paper with brand on and sent fresh to customers.

The first absolute requirement is the purity and cleanliness of milk. Tainted or filthy milk cannot by any process produce the finest quality of butter or cheese.

The capacity for large quantity of milk of high per cent. butter-fat, capacity to masticate and digest well a large amount of food in "the individual cow, her predisposition, education, and treatment," determine not only the value of the cow and the profit from her, but also almost surely the same qualities and value in her progeny. But the bull that has not these inbred qualifications does by far the most harm and is less considered generally in breeding than the cow. Watch the calves' digestion. Overfeeding causes scours, and spoils the digestive system of the prospective cow when mature to take the greatest amount of food economically. Too much skim milk is a very fruitful cause of scours. Give them a couple of raw eggs when it first starts, and repeat if necessary; this is pretty certain to correct the trouble; reduce the feed. A variety of bulky food, such as will be best for the milk cow, is best to rear the heifer on.

Winnipeg, Man.

Rose Lawn Creamery.

1.—I always have my cows come in the last week of February and the two first weeks in March, because at that time of year we have very little work we can do on the farm, we are able to get good prices for the calves we sell, and those we raise make stronger cattle.

2.—I raise the heifer calves from the best cows only. I tie them up in the stable when three days old, milking the cows and giving the calves all they will take for a week or two, or even three, according to how thrifty they are; then they are moved to a large box stall, and fed separator milk and new milk (half and half) for a week or so. At this time I commence giving them a little meal in the milk, increasing the meal as I diminish the new milk. For meal, I use wheat ground fine; have no rule to guide me as to quantity, but watch the calves and see how it agrees with them; at no time do they get over a pint at a feed in six quarts of skim milk. They are kept in a loose box until fly time is past, with mosquito netting over window. In the fall they are weaned from the milk, when we commence feeding green oat hay to the cows, which we do when the grass fails. The calves have all the hay they will eat all summer. When they are weaned from the milk they are put in a large box stall, all loose, and are turned out with the cows to water, or, in fact, just the same as the cows are treated. The second winter they are tied with chains round their necks, and fed the worst of the hay, the butts of the oat hay; in fact, the cleanings of the mangers from the calves and cows. And I find if properly treated the first year they will digest anything after that and thrive on it.

3.—I have the heifers come in at 2½ to 3 years old. Calves treated in the way I mention will come in (if allowed) at 20 months.

4.—I cannot answer, as we keep no record further than this: I try not to keep any cows that do not give a good quantity of milk of good quality. I test the milk of all heifers the first year by the Babcock test, and if both quality and quantity are there, I consider it my fault if she does not a little more than pay her own way.

5.—I have made good use of the Babcock test, feeling satisfied that I am not milking cows at a loss, also that the churn and separator are doing

their part thoroughly. We handle the milk as follows: The cows are always milked at 7 o'clock, both ends of the day, and always in the stable, which is kept clean and well bedded. As each cow is milked the milk is strained into the receiving cans, and when milking is finished the milk is taken to the creamery and run through the separator (a No. 7 Alexandra), the cream is then cooled by placing the can in cold water. We churn four times a week, with cream at first acid; the butter is washed while in the granular state, also salted in that state. When it is well drained off, the butter is placed on butter-worker and put into shape for printing. The prints are wrapped in parchment paper and labeled "Rose Lawn Creamery," the butter is placed in the ice-house and shipped every Friday per express to Winnipeg.

W. M. CHAMPION.

Raising Calves on Separator Milk.

It is customary among stockmen who raise their calves on skim milk or separator milk to add oil meal along with either oat or corn meal as a substitute for the butter-fat. Experiments which have been conducted lately by Professor Curtiss, of the Iowa Experiment Station, on feeding calves showed that oil meal was not only a more expensive food than either oat or corn meal, but gave less gain for the amount consumed than either of the other foods. The plan of the experiment was to divide the calves into three lots. Lot No. 1 were fed oil meal and milk; No. 2, oatmeal and milk; No. 3, flaxseed, corn meal and milk. Three experiments were conducted in succession, beginning when the calves were quite young, and extending over a period of sixty, ninety and seventy-four days respectively. The result proved that the oatmeal and milk gave the greatest gain, and at the least cost, while the oil meal and milk produced the least gain at the greatest cost. In the last experiment a fourth lot were fed upon corn meal and milk, resulting in a greater gain than any of the former experiments. While the results of these experiments are contrary to prevailing opinion concerning the relative value of these feeds, it is not unnatural, or in any way unreasonable, that the carbonaceous grains should be more suitable for feeding with skim milk than a highly nitrogenous product like oil meal. On the contrary, these results are based upon principles in conformity with both practical experience and scientific laws. Separator skim milk is of itself a nitrogenous food, having a nutritive ratio of about one to two, while oil meal averages about one to one and eight-tenths. Oil meal is the product of flaxseed with, substantially, all the oil extracted. In a ration of oil meal and separator milk we use two products, both naturally rich in fat, but from which practically all this substance has been removed, and the remaining products give a one-sided ration. The pure flaxseed is a more suitable substitute for the butter-fat, but as it contains as high as 35 per cent. of fat it must be fed in small quantities. In the experiments at the Iowa Station only 10 per cent. of it was used in the flaxseed and corn meal ration. The carbohydrates contained in corn and oats seem to be equally efficient, and are safer feeds.

In the same bulletin Professor Curtiss points out the advisability of pursuing a different method in the raising of beef and dairy calves. Those intended for dairy purposes require to be kept in thin but thrifty growing condition, while the calves intended for beef should be fed such foods as will maintain constantly an even covering of thick flesh from birth to maturity.

Condensed Milk.

Among the many products for which Canadians may find a market in Great Britain, Professor Robertson has mentioned condensed milk. While it is not yet manufactured to any extent in this country, if a market can be secured for it which will pay a greater profit to dairymen than butter and cheese there is no reason why condensed milk factories should not prove successful. The experience in its manufacture which had been acquired up to the year 1880 pointed to the fact that the fresh milk should be previously warmed and twelve to thirteen per cent. of its weight of cane sugar added. It was then condensed in a vacuum pan, at a temperature of 158° Fah., to about one-third or one-fourth of its volume. The evaporation went off through a cooled pipe from the top of the pan. The balance was packed in air-tight soldered cylindrical metal vessels.

From 1881 to 1883, experiments were carried on in Germany and Switzerland with condensing sterilized milk without the addition of cane sugar. It was obtained by purifying the fresh milk by the application of centrifugal force and then boiling it in order to coagulate the albuminous part of the nitrogenous matter. The same process is used for condensing as with ordinary milk. The vessels after being filled and soldered are placed for a short time at a temperature of 248° Fah., the keeping qualities of the substance being tested by submitting it for a few weeks to a temperature of 85° to 90° Fah., and after the lapse of this time seeing whether there has not been indications of fermentation shown by distention at the bottom or top of the vessels. If the preparation of condensed milk without the addition of cane sugar is carried on with the necessary precautions, the product obtained is a body possessing great keep-