

manure, which sum would secure them 1,000 lbs. of phosphate and 400 lbs. plaster. Had no faith in salt. Some manage with \$12 to the acre in artificial manure. A turnip crop yielding less than 600 to 700 bushels to the acre was a failure. The actual outside cost was \$45 dollars an acre; the crop realising \$75, at least, leaves a good margin of \$30 to the acre for the work. He knew of no system of farming that pays better than the carrot crop. In sugar beet culture he had no experience. Had no doubt, however, that it was the coming crop. Turnips have a number of enemies to contend with, which was a considerable drawback to raising this crop. Some very valuable suggestions had been made at this meeting. Mangolds improved one-third by keeping, and produce a better quality of milk and butter. Carrots are the most nutritious root grown. Cattle fatten faster on this food than on any other, thirty per cent. Seventy pounds of carrots were equal to one hundred pounds of turnips.

Mr. R. Williamson contended that the principal thing is to get the land rich. Had heard of 1,400 bushels of turnips being raised to the acre. This was rarely heard of now. He had succeeded in raising a fair crop of mangolds, having secured 5,000 bushels off 8 acres last year. Cultivation of mangolds did not cost much. He planted with two ploughs and home-made drill with force feed. Sowed rows every 3 feet. Preferred to put roots on rich soil. He would now take up the potato question:—They are the things to clean up land with. Did not care how much Indian grass or any other obstacles that came in the way, with a little manure he could raise a good crop of potatoes. Manure does not produce the scabby appearance on the potato as suggested. Give them plenty of room. His manner of planting potatoes was to (1) choose good dry soil; (2) make it clean while cultivating, if not clean before. Potatoes were the best crop to clean land with. The mode of planting did not matter much, only give them plenty of manure. Nothing gained by planting in hills. Plant in parallel rows, 3 ft. apart, set 12 to 14 inches—not nearer than 12 inches. The size of sets is immaterial, but the more substance you have the better. It was possible to break off sprouts and have them grow and raise large potatoes. The potato crop must be a more important crop in the future than it is now. One firm in Ohio had already handled over 240 carloads of potatoes from Ontario. It was not the lack of potatoes in Canada that has made the price they command. It was the foreign demand. Potatoes need cool weather and large hills. By careful and complete cultivation, a case has been known where 2,000 lbs. of potatoes have been secured from 1 lb. of seed. This had occurred in Scotland. Plant 4 inches apart, if on solid land, and 6 inches if light, and on land that is dry. Cut the sets and plant at once. He put the potatoes in pits in the field, covering with little dirt, allowing the outside to freeze, which keeps the potatoes from sprouting. Cannot keep them from sprouting in a warm cellar. Their flavor is better when kept in pits than when kept in cellars. For taking them out of the ground he used a pointer plough—and dumped them out from carts into pits. His pits were 3½ feet wide and depth of plough down, putting over plenty of straw, and then a slight coat of soil. He considered the St. Patrick far superior to the Early Rose. The Mammoth Pearl is also good, being large and late. For battling with the bugs he used 1 lb. Paris green with 100 lbs. plaster. Should not let the bugs get the start of them. One application will sometimes check them, but two or three applications will effectually do it. Apply the mixture at sun-down, scattering it with the hand to the windside. Had used salt and water, which killed his potatoes.

Mr. T. Hesketh gave some of his experiments in potato growing in the Old Country, in which he secured the best crops by using rotted turf. This, he maintained, was the best of manure for potatoes. Potatoes planted with this manure were cleaner and free from scabby appearance. Potatoes were generally scabby where rotten wood had been lying around. Sod was a good top dressing.

Canada has become more emphatically a dairy country than the United States. With a population of 5,000,000 they manufacture annually 60,000,000 pounds of cheese, equal to twelve pounds per capita, while we, with 50,000,000, make 300,000,000, or six pounds per capita. With a population not exceeding one-tenth of ours, their exports of butter are about one-half as great as ours. —[Am. Ex.

## The Dairy.

### The Munster Dairy School.

NORMANDY BUTTER.

Mr. Barter gave an address on this subject at Munster recently. He said:

Last autumn he visited some of the dairy farms near Bayeaux and Isigny, celebrated as producing the best butter in France, and that which commands the highest price in the Paris market. The farms are generally large, from thirty to over 100 cows being kept. The land is very rich, and the fields are divided by hedges, which give quite an "English" look to the country. Nearly all the cows are tethered, and regularly shifted every day. By this means more stock can be carried on the land. They are kept out on the pasture as much as possible, and are given hay, bran, flour, mangles and carrots. These latter are highly recommended as a butter producing food. The Cotentin breed of cattle is almost universally used. The cows are large and heavy looking, far too thick necked and bull headed, I would say for milk, but I was assured that some of them gave 52 pints of milk per day for a considerable time after calving. On some farms two or three Jerseys are kept to improve the color of the butter. The cows are kept very clean, they are daily curry-combed, and their udders carefully washed and dried. They are milked three times a day (at about 4.30 a. m., 11.30 a. m., and 6 p. m.). The milkers go out to the field on donkeys, with a kind of pannier slung on each side, containing large brass vessels, which are always used in this district, having narrow openings which can be securely fastened by a stopper, so that there is no danger of the milk being spilt on its way home. The farm houses within are a model of cleanliness; the kitchen and dairy utensils, which are nearly all of brass, being polished to the highest degree of perfection.

The dairies consist of three apartments—1, milk dairy; 2, churning room; 3, washing room, with boiler. They are generally flagged, the floor having a good fall to carry off water. It is considered most important that the supply of water for the dairy should be very pure and good. The milk room is kept at a temperature of 50°, and is heated in winter either by stoves or pans of charcoal. The milk is set in brown earthenware pots, about 13 inches deep, which are placed on raised brick benches. It is skimmed three times, the first only standing for twelve hours. The cream of this first skimming is kept separate. In some farms it is churned alone; in others the cream of the second is mixed with it immediately before churning. The third skimming is only used to make inferior butter for home use. The skim-milk is used for vealing calves. In hot weather the cream is often changed from vessel to vessel to remove any deposit of sour milk at the bottom, which is considered to injure the quality of the butter if allowed to mix with the cream. The cream is put in the churn at the temperature it is in the dairy; it is not heated.

The churn universally used is the Normandy barrel, which I consider is the best I have seen, and ought to be more used in this country. I inspected the works of Messrs. Durand & Co., at Isigny, where churns of the best description are made. The openings are of polished metal, fitting close, without india-rubber. The beaters inside are three plain boards running the length of the churn, about two inches from the sides, so that there are no corners where sour milk could accumulate. Some of them are fitted with a small pane of glass, so as to see at once when the butter comes.

I saw the whole process of churning and butter-making at a farmer's near Bayeaux, who had obtained several gold medals for his butter, and the bronze medal at the Paris Exhibition of 1876. The farm consists of about 160 acres of excellent land, the rent being £4 an acre. Seventy cows are kept, all Cotentin breed. The churn was turned by horse power at the rate of sixty revolutions a minute. The churning took 40 minutes, and was stopped the moment the butter came in small grains. Two-thirds of the buttermilk was then removed, and spring water poured in by a pipe, as before described. It was then turned slowly for thirty revolutions, two-thirds of the milk and water being again taken out, and more water poured in. The two first washings were reserved for the pigs. The same operation was then repeated till the water came away quite clean. It took in all eight washings, the number of revolutions being

reduced each time. By not removing all the buttermilk or water, the particles of butter are kept separate, so that they are much more completely washed and the grains preserved. After the last washing the churn was half filled with water and rocked gently backwards and forwards to collect the butter, which was removed in lumps of about 4 lb. It was not worked at all, but each lump was slightly pressed with the hands in a basin of water, then taken out and gently patted with a wooden spoon to remove the water, and placed on a little round table covered with a clean, new cloth, which was branded with the name of the farmer and the medals he had obtained; five or six lumps were placed one over the other, and flattened and shaped with the spoon, the only implement used. The butter was then neatly pinned up and the weight marked on it, so that there is no tare or deduction of any kind; each package weighs about 25 lb., and is placed in a small basket lined with reed, which costs about 4d. A carrier from the railway company calls around to the farmers to take the packages to the station; the entire cost to Paris, including carriage, tolls, factory, &c., is about 2d. a lb. The butter sent in this way direct to Paris is all consigned to factories, and sold by auction at the Halles central; that which I saw made fetched about 2s. 9d. a lb. At another farm I visited the proprietor had got 3s. a lb. the week before, and often gets 4s. 3d. in winter. The Normandy butter we get in England is in reality only second or third quality. All the farmers and dealers I spoke to on the subject said the best butter was never sent to England, as the English would not give the price for it.

I visited the weekly butter market at Isigny. It began at 10 a. m. The women stood in lines, each with her basket before her; the lumps of butter, varying in weight from about 10 lb. to 70 lb., were each made up in a clean cloth. The buyers go around with a small wooden knife, and examine it very carefully, taste and smell it, and often break off large pieces to see the grain. They write on the lump of butter the price they offer. If not accepted, it is blotted out by passing the knife over it; but if agreed to, the quality and private mark of the buyer is put on it, and the women take it to the depot, where it is weighed, paid for, and the quality again checked. Each description is placed separately in very large baskets, lined with linen. At one depot I saw it divided into 1st, 2nd, 3rd and 4th quality; the prices were: 1st 1s. 7d.; 2nd, 1s. 4d.; 3rd, 1s. 3d. The butter for Paris was despatched the same day by the 2 p. m. train in a special wagon arranged with shelves. All the butter is sold perfectly fresh, the supply averaging about 35,000 lb. per week.

I would say, in conclusion, that as good butter can and has been made in the south of Ireland as anywhere in the world, and I hope I have shown clearly that the art of dairying in its practical bearing, and the manufacture of butter of the highest quality, is not, after all, such a very difficult subject. Scrupulous cleanliness and close attention to detail is the great secret of success. —[Dublin Gazette.

Parturient apoplexy or milk fever is a disease that cows in good condition are quite as likely to have as emaciated ones, and the longer the intervening time between confinement and its appearance the stronger can be the hope of recovery. The first indications will be indifference to surrounding objects, bloodshot rolling eyes, their inability to move the hind legs, and afterward the forward ones. The remedy is stimulation, for which spirits are good, and among them brandy is the best. A pint of it, or of gin, can be given to a large cow with good results to stimulate the blood, and keep it moving. Then give from a pound to a pound and a half of epsom salts at a dose, and repeat two, or even three times if necessary, to move the bowels. Laudanum can be given in the first stage to control the pain, and quite large doses can be administered. As many as four ounces have been given with safety, if less quantities did not relieve. Retention of the afterbirth is a common thing among old cows in some farmers' herds, and is caused in many instances by improper treatment at calving time in previous years. If it is to be removed by force it should be done by an experienced hand. Unless a veterinarian can be called or the family physician will attend to it, spurred rye or ergot should be given. A strong dose of tansy has proved efficacious in several cases that have come under my observation; the cow drank it with avidity in one instance. —[G. R. D., Tribune.