

MISCELLANEOUS.

Making Condensed Milk.

In 1888 Switzerland exported 11,770 tons of condensed milk, a quantity equal to 520,000 boxes, or just about 25,000,000 tins. These figures represent practically the whole of the output, for the quantity consumed in the country is insignificant compared with what is exported. Fifteen thousand cows are required to produce this quantity of condensed milk. During recent years the condensed milk industry has caught on in other countries besides Switzerland; but, even collectively, the new competitors do not approach the output of the pioneer country.

There are a great many condensed milk factories in Switzerland, most of which have sprung into life during the last five or six years, until Swiss milk brands in a shop window now present almost as bewildering a variety as the Swedish matches. The industry mainly depends, however, upon three large factories—the Henri Nestle Company, with its three works at Vevey, Bercher, and Payerne; the Anglo-Swiss Company, with factories at Cham and Guin; and the works of Lapp, at Epagny. Henri Nestle, who, like so many modern captains of industry, started life as a pharmacist, was the pioneer of the condensed milk business. His invention proved a gold mine, and at his death, a year or two ago, he was reckoned one of the wealthiest citizens of the Republic.

The process of condensed milk manufacture is exceedingly simple. Almost every village in the district tapped by one of the factories possesses a milk collecting office, to which the peasants bring the milk fresh from the cow. These milk offices are owned by separate companies, with whom the factories contract for their supplies. At the collecting-office the milk undergoes a refrigerating process. Upon its arrival at the factory it is first warmed gently over a vapour bath, and then exposed to a greater heat (not, however, exceeding 80 deg. C.) in copper vessels. The next manipulation consists in the addition to the milk of 13 per cent. by weight, of the best refined sugar. The mixture is then pumped into a vacuum-pan for condensation. There is nothing special about these vacuum-pans. They are of the kind used at almost every manufacturing chemist's, in sugar-factories, and in many other works.

The pans have a false bottom and are fitted with spiral hot water tubes. The aqueous vapour given off by the milk, which is kept boiling under low pressure, is withdrawn through the suction pump at the top of the pan. When sufficiently condensed the milk is withdrawn from the pans, cooled in vessels placed in fresh running water, packed in 1 lb. tins, and hermetically sealed. Swiss condensed milk of good quality should contain from 10 to 10.50 per cent. of fatty bodies, 8.75 to 10.25 per cent. cas-

ein, 53.25 to 55.00 per cent. of sugar, about 2 per cent. of salts, and from 23.50 to 25.25 per cent. of water. Condensed milk is exported to all countries of the world. South America and India take large quantities, and among the Chinese the milk is becoming popular as a jam, and eaten with bread. Since the commencement of 1890 an enormous impetus has been given to the Swiss condensed milk industry by the allowance of drawback of duty on sugar used in its manufacture. The immediate effect of this concession was an increase in the exports of over 20 per cent.—"Farming World."

Tuberculosis.

"What causes bovine tuberculosis?" asked a correspondent of the "Rural New Yorker" of Dr. E. T. Brush, who replied as follows:—"In a word, inbreeding. All breeders know that this practice tends to weaken the offspring, and the longer it is continued the more apparent becomes the weakness. There are two permanent varieties of the domestic breeds of the bovine tribe, one the large and the other the small form. To the latter belong the most noted distinctively dairy breeds, and to preserve their dairy qualities they have been closely inbred. The result is that they are nearly all scrofulous and tuberculous. From the large variety come the half-breeds. The distinctive breeds of each are formed by greater or less infusions of blood from the opposite variety. Among half-breeds the one most closely inbred is the Short-horn, and this is the most tuberculous. The disease develops less frequently among the beef than among the dairy breeds, because the former are generally killed while young, and are not subjected to the extra strain of giving milk. Too early fecundation is also given as another cause of tuberculosis." "Are any breeds of cattle more subject to the disease than others, and why?" "From the answer to the previous question it will be seen that the more closely a system of inbreeding is pursued and the longer it is continued, the more likely other conditions being equal, is the strain or breed to be subject to tuberculosis. The beef breed which has been most closely inbred and which is also most tuberculous has been named. The dairy breeds which have been most closely inbred are the natives of the Channel Islands. An official of the Bureau of Animal Industry says that 20 per cent. of the thoroughbred Jerseys of the Northern States are affected with tuberculosis. The inbreeding to which this breed, as well as the other Channel Island breeds, has been subjected for many generations, and the unnatural forcing for large milk yields, have contributed to this result. These are the facts; are the deductions reasonable? Proper housing and care, avoidance of too early breeding and too long continued milking, and general sanitary precautions, will prevent the development of the disease. No cow should drop a calf before she is 3 years old."

Improving the Early Cheese.

In addition to other excellent work accomplished during the past season the effort of the Western Ontario Dairy Association in providing special instruction at four leading cheese factories in the making of first-class April and May cheese, and in operating the Babcock Milk Tester, is certainly to be recommended. As to the future usefulness of the Babcock much depends on the skill and care exercised in its use this season where introduced. These four schools of instruction have been fairly well attended, though it was hoped that more of the makers in the west would have availed themselves of the opportunity. However, fifty cheese-makers attended them and remained from one to five days each, all expressing themselves as more than repaid for coming on account of the practical knowledge received. No doubt, if this work is continued another season, larger numbers will avail themselves of the opportunity thus afforded.

Milk Preservatives.

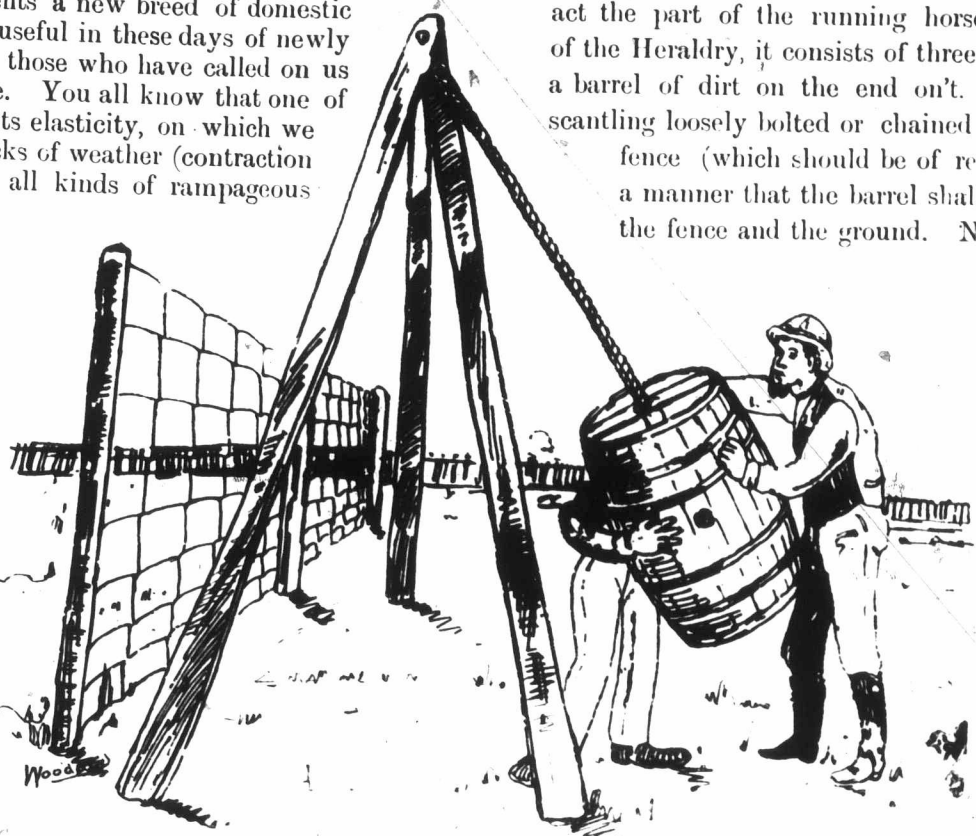
To a correspondent who asks which is the best milk preservative, the *Jersey Bulletin* replies, cleanliness and coolness. A large number of substances, such as salt, sugar, soda, saltpetre, salicylic acid, and boracic acid, have been recommended, and all of the so-called preservatives contain more or less of one or more of these substances; but we know of not one that will be of any use in keeping the milk from souring that is not more or less injurious, if taken into the human stomach. Therefore we know of no milk preservative which we can recommend anyone to use. Really none of them will keep milk fresh for any considerable time.

H. Stewart concludes a very readable article on "Feeding Work Horses," in a late *Country Gentleman*, as follows:—"The digestion of food may be very much interfered with by mistakes in watering. This should always be done before feeding, and never soon after it. The water is absorbed by the intestines with great rapidity. A few minutes will suffice to absorb three or four gallons of water, and this dilutes the salivary secretion so as to supply all the water needed for the digestion of food, and no water will then be needed soon after feeding. This avoids the washing of undigested food from the stomach into the intestines, where it ferments and produces much gas, and causes those frequent colics that on the whole reduce the usefulness of our work horses fully one-half. For every attack of disease cuts off so much of the thread of life, and there are very few horses that are not affected injuriously with colic—the result of mistakes in feeding, but more in watering—sufficiently to have an appreciable result on the duration of life."

The ROYAL BUNTER

The accompanying cut represents a new breed of domestic animals which will be found very useful in these days of newly invented fences. Our agents, and those who have called on us a the fairs, will recognize it at once. You all know that one of the main features of our fence is its elasticity, on which we depend for defense against the attacks of weather (contraction and expansion) as well as against all kinds of rampageous animals. Well, you cannot assert this any stronger than the next man who has a fence with no more spring than a stone wall, and the only way you can satisfy the inquirer is to prove it. Now, most animals seem to dislike a practical joke as much as their human brethren, and after being "revolutionized" by a collision with our fence, they object to repeating the game. By the way, this is an exception to the saying that "revolutions never go backwards," as they do, with us, unless it is the low fence, when comes the danger of a somersault, or perhaps a broken neck.

But, to return to the Royal Bunter (which was devised to



act the part of the running horse). If described after the manner of the Heraldry, it consists of three legs rampant, a chain pendant, and a barrel of dirt on the end on't. The legs may be of twenty-foot scantling loosely bolted or chained together, and astride the panel of fence (which should be of regular lengths of two rods), in such a manner that the barrel shall, when at rest, hang quite free from the fence and the ground. Now draw the weighted barrel as far

away as possible and push it into the fence as hard as you please. This can be repeated "until it has the desired effect," that is, prove that no amount of hammering or contraction even when concentrated on a single panel, will cause the fence to exhibit "that tired feeling" or seem to hang down on the posts. You can freely invite any other fence man to make the test. The Royal B. will soon prove whether his claims for "adjustable tension" and "self-regulating" are well founded or not.—*Coiled Spring Hustler.*

PAGE FENCE LEADS.

Each year there are more miles of Page Fence used by the farmers of the United States and Canada than there are of any two other smooth wire fences. Page Fence which has been in use since 1860 is as good now as when first put up.

IS READY MADE.

We furnish the fence ready to be put on the posts and made with eleven horizontal steel wires tied by a cross wire every foot. Each wire is coiled into a perfect spring its entire length, which keeps the fence from sagging and adds to its strength.

NEEDS FEW POSTS.

Our five-foot farm fence needs but three posts to the hundred feet, and will not sag nor draw together between. It will turn every kind of farm stock, and stop everything but wind and snow. Including posts, it can be built at less cost than that of any other stock proof fence.

THE HUSTLER.

The above article is from our illustrated monthly paper, which will be sent free to all interested in fences. Send us your name on a post card, and we will mail the paper and a price list of fencing. Address,

PAGE WIRE FENCE COMPANY OF ONTARIO (Limited),
WALKERVILLE, - 1893 - ONTARIO