

popular audience, and he is a genius, in the best sense of the term, for he has an unique capacity for taking pains. The bulletin on pastures is from his brilliant pen, and records the experimental seeding carried out by him on 17 farms in Scotland during the past four seasons, with control plots at the College Experiment Station at Kilmarnock. The result of the lengthened and extended series of experiments has been to show the necessity for some revision of methods usually pursued in Scottish agriculture. In laying down land to pasture, say for three years, the usual practice has been to "sow out," as we term it, with an oat crop and rye grass seed, the latter for hay in the following year. It has been accepted agricultural gospel, that a hay crop is impossible without perennial rye grass, even although there may have been misgivings as to the succeeding body of pasture. Mr. MacAlpine's experiments show that rye grass is not necessary for the hay crop, and is still less necessary for the succeeding pasture, in the proportion usually assigned to it in Scottish farming. Mr. MacAlpine lays down the sound, self-evident proposition that cattle browse on green grass and not on white grass. No seed degenerates so rapidly into white "pasture," and, therefore, there are other grasses which ought to be included in any well-balanced seed mixture if pastures are to follow. Chief among these are the fescues, cocksfoot, tall oat grass—the latter not of the bulbous variety, which degenerates into a most troublesome weed—and timothy and Italian rye grass. From these normal mixtures rye grass is not excluded, but it is made evident by the combined results that a well-selected seeding of approved grasses, with an admixture of clovers and alsike, makes the best all-round hay crop and pastures. The four tests of a good grass mixture are: A profitable hay crop; a green pasture, which stock will graze; freedom from weeds, and enhanced fertility through the action of the clovers, as nitrogen collectors and distributors in the soil.

Contagious disease was happily rare amongst British stock in 1904. The summary of all that transpired throughout the year has now been published by the Board of Agriculture and Fisheries, and the figures with respect to the dreaded scourges of pleuro-pneumonia and foot-and-mouth disease are most satisfactory; that is to say, there are no figures. Cattle are very healthy in these islands, and long may they so continue. Sheep are also free from any dangerous diseases; the one troublesome thing being scab, about which there has lately been a great bother. Swine fever, or hog cholera, as it is termed on the other side of the Atlantic, is being got well in hand, and ere long one hopes to hear that figures relative to it are like those relating to pleuro-pneumonia and foot-and-mouth disease, non-existent. But two diseases are giving rise to disquietude. Anthrax is in some districts too common, and there is reason to suspect that this is largely due to the ignorance and carelessness of stock-owners in whose hands an animal may be struck down. Such a carcass should on no account be opened. It should be consumed by fire, and every vestige of it burned to ashes. Unhappily there is no possible external method of diagnosing anthrax. The only possible way is by cutting off a very small piece, say of the ear, and having the blood examined by a bacteriologist. Fortunately, there is no possibility of an expert mistaking the spore of the disease, but the farmer is placed in the cruel position of being criminally prosecuted for not reporting the presence of a disease which cannot be clinically diagnosed. His only safety lies in concluding that every animal which dies suddenly dies of anthrax. To proceed on any other principle will assuredly bring him within the clutches of the criminal law. Yet having regard to the deadly nature of the disease, and its communicability to the human species, the authorities would seem to have no alternative. The other disease which threatens to increase is glanders among horses. This disease is almost unknown among farm horses, but in London and one or two other cities having a large horse population, it almost seems to be on the increase. The cause of this is now said to be the ease with which the disease can be spread by animals in which it is latent. The mischief is that all this is capable of prevention by the use of the Mallein test, but the Government refuses to make provision for the adequate compensation of owners whose horses may be destroyed to save others. Perhaps nowhere in the world are there healthier horses than in Great Britain, but these glanders centers in large cities are a blot on the administration of our Contagious Diseases Acts. One rejoices that the stock which colonial and foreign buyers seek after is singularly free from all such diseases. Sir Walter Gilbey thinks we should not let the world know that we have these troublesome diseases in some places to contend against; but ignoring their existence won't help to clear out disease, and experience shows that nothing is so effective to that end as the free discussion of the extent and effect of disease. Cover it up and it does endless mischief; reveal its existence and bravely combat it and disease can be overcome.

I suppose you sometimes have trouble with people who profess to be able to govern much better than those who are called by the votes of their fellows to undertake that office. It is so here. The Board of Agriculture could be run by at least a score of amateurs, who, if one were to take them at their own valuation, would all make ministers. On the whole, the Board does very good work. It does not attempt too much, and it wisely endeavors to do the greatest good to the greatest number; hence, it occasionally trends on the horns of those who would rather it tread on the horns of the other man. Any mistakes

made by the Board have been made in a laudable endeavor to honor this sound principle, and in spite of occasional slips, and some wrong moves, on the whole the successive presidents have done first-rate work. Some have been stronger than others, and some have had more to show for their labors than others. Mr. Long was the most successful legislator the Board has yet seen; Mr. Hambury easily the most aggressive administrator. He meant his office to be honored, and to that end he first of all set himself the task of showing that he magnified his office. Soon the world took that office seriously, and under Mr. Hambury the Board got on very well. Several problems set by him are now being seriously grappled with, and the memory of the big, jolly Lancastrian will survive in agriculture for many a day.

In stock matters there is a large amount of useful activity. Clydesdale sires are being eagerly hired for 1906, and there are few complaints among stallion owners this season. The recent series of county shows reveals the presence in the country of quite a large number of useful, well-bred two-year-old colts. Other classes of stock have been making plenty prices. A sale of surplus Hackneys, from the famous Terregles stud of Mr. C. E. Galbraith, was recently held at Peterborough, when about £1,023 15s. was paid for the London champion horse, Administrator, and the London champion mare, Rosadora, made £745 10s. These are surely great prices. At recent county shows we have had very good displays of all classes of stock, although we incline to think there was an absence of an out-and-out sensational animal in almost any breed.

"SCOTLAND YET."

DAIRY.

Handling Overripe and Tainted Milk.

The subject of the following letter is probably the most important that confronts the cheesemaker at this season. With an extended and successful experience as a maker, proprietor of a first-class factory, the product of which ranks at the top of the market, and one of the directors of the Western Dairymen's Association, Mr. Brodie, the writer, is well qualified to deal with the question.—Editor.

In handling overripe milk at cheese factories, there is no doubt but the best method is to return it to the patron who sent it, as there is positively no excuse whatever for the cheesemaker who accepts it, or the patron who delivers it.

The cheesemaker has in the acidimeter a quick and accurate method of ascertaining the exact per cent. of acidity in milk as it is delivered, and if he rejected all that had over .21 per cent. of acidity he would not have overripe milk to make up, and if he set this standard and impressed on the patrons the absolute necessity of cooling milk to 60 or 65 degrees he would avoid the unpleasant duty of returning it.

This is certainly a case in which the ounce-of-prevention-is-worth-a-pound-of-cure remedy is very applicable, and if patrons only realized the loss they sustain by delivering overripe or tainted milk at factories I think they would make an effort to deliver it always clean and sweet.

If the cheesemaker accidentally or carelessly accepts overripe milk, then it is not a question of how much cheese he can make from the milk delivered, but to get a passable cheese at all, and he will have to "hustle," raise temperature as quickly as possible to 84 or 86 degrees, use about one ounce more rennet at setting to 1,000 pounds of milk, cut curd earlier or before it has firmed as much as you would a normal-working curd and very much finer, remove part of the whey, raise temperature quickly to 98 degrees; in extreme cases temperature might be raised three or four degrees higher, but I would rather cut curd an extra time than raise the temperature above 98 or 100 degrees. Keep well stirred all the time and when removed close to curd, dip with a little less acid, or as soon as the curd is fairly firm or cooked, and stir out well in sink; endeavor to get it quite dry before piling up to mat. The object is to get a certain per cent. of moisture removed from the curd, or to have it fairly well cooked before there is sufficient acid development to injure the texture of the cheese. If you have been successful in this you can likely proceed from this stage to the hoops as with a normal-working curd—a little less salt, perhaps, as the average is higher. If you have not been successful in getting the curd fairly well cooked before there is .21 or .22 per cent. acid on the whey at dipping, or .30 or .32 per cent. acid on dippings from sink after curd has been dipped and well stirred out and good and firm, you will not have accomplished the object you have been working for. Nothing you can do afterwards will prevent the product from being short-grained, mealy-textured, acid cheese, just to the extent that you have been successful or not at this particular point.

In handling tainted milk every preventive precaution should be strictly observed, by making a close examination of every can of milk delivered each and every morning, and reject always any that is tainted, and send instructions to the patron to observe strict cleanliness and cool milk to 60 or 65 degrees. But if taints cannot be

discovered in this way, curd tests should be made to discover the guilty party, and the cause removed. In treating milk tainted by the cows having access to objectionable foods, there is only one satisfactory way—reject it entirely. If the taints are of bacterial origin, causing pin-holes, gassy curds, bad flavor, etc., etc., especially I would emphasize the importance of cooling the milk to 60 or 65 degrees, as temperature is a greater factor in determining the number of bacteria than the extent of the original contamination. If all preventive measures have failed, the use of a pure lactic acid culture, or, as is commonly known among cheesemakers, "a pasteurized starter," introduced previous to adding rennet, will be found not only beneficial, but absolutely necessary, and when used intelligently the results will be found satisfactory. JOHN BRODIE.

Butter Trade in Great Britain.

The race for supremacy in the butter business in England is daily becoming more keen. For years past Danish has held first place, but now Sweden, Finland, Siberia, Argentina, Australia, New Zealand, and last, though not least, the Irish creameries have entered the contest. Swedish and Finnish butters, on account of their bulk, command a large share of attention at present, and are coming to the front. Recently, in the Manchester market, there was an exceptionally good demand for Finnish, for it sold at nearly as high a price as the choicest Danish.

From the first of July last, until the middle of May, the import of Australian butter was 20,000 tons in excess of the same period two years ago, and of New Zealand nearly 5,000 tons. The receipts from Australia and New Zealand are virtually at an end for this season, and it most probably will be September before the first shipment of next season's butter reaches the United Kingdom. The import of butter into England is over 360 tons a week below that of last year.

I give herewith the total imports of butter from Australia, New Zealand and Canada for eleven months, from the 30th June, 1904, to 27th May, 1905:

	Cwts.
Victoria	238,910
New South Wales	155,059
South Australia	7,306
Queensland	54,833
New Zealand	292,440
Canada	257,407
Total	1,005,955

The total for same period in previous year was 825,216 cwts. P. B. MACNAMARA, Commercial Agent.

Colored or White Cheese.

To the Editor "Farmer's Advocate":

Sir,—Regarding the tendency to use coloring matter in cheese and the effect of the same from a commercial and a health standpoint, I would say in the outset that there seems to be no great change taking place in the relative proportions of white and colored cheese being manufactured. Certain districts in Eastern Ontario have, for years, produced colored cheese almost exclusively, while others have manufactured white cheese almost entirely; while again, other sections are more mixed. On the whole there are probably two-thirds of the cheese in Eastern Ontario that are not colored. From a commercial standpoint there is very little to say, further than this, that there is a certain demand for white and a certain demand for colored cheese, and it is the business of the manufacturers to aim to satisfy these demands. They cannot be the dictators. The great bulk of the coloring used is a harmless vegetable coloring, an extract from the annatto seed. Some, of course, comes from other sources, such as coal tar, etc., but we have a preference for the former, both on account of its being known to be entirely unobjectionable, and from the fact that it seems to hold its color better. Where a good brand of coloring is used there can be no objection to it from a health standpoint, as the material used in it is not injurious to the health, and the quantity used is so small that this acts as a secondary safeguard. You will see what a small quantity is used when I mention the fact that there is only an ounce, or a little over, used to a thousand pounds of milk.

The question of the use of color in butter and cheese practically simmers itself down to one of taste. Speaking personally, I like a little coloring in butter when it would otherwise have a white, lard-like appearance, and I have no objection to the coloring of cheese, providing a good brand of coloring is used and the cheese are not colored too deeply. J. W. MITCHELL, Supt. Eastern Dairy School.

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