

tive of a panorama of a countryside, as it opens out in the evening during the homeward drive, is not the least of these. Before is the road, with its avenue of straggling trees, duplicated here and there by others across the plain. Now and again a church spire appears above a cluster of houses, and bespeaks the religious nature of the people. Here and there is a windmill, with its slow, cumbersome masts toiling at the strain of the grinding below. The quaint farm buildings come into view at regular intervals, and remind one of the simple and wholesome domestic life within. Stretching away from the roads, the miniature canals mark the boundaries of farms or fields, and, as far as the eye can see, herds of these great, quiet cattle tell of an honest, thrifty husbandry that is as old as the history of the country itself. Such is rural Holland. One is the richer for having seen it.

H. S. ARKELL.

### SOME DAIRY PROBLEMS IN MAINE.

Editor "The Farmer's Advocate":

At the annual meeting of the Maine State Dairy Association, recently held in Auburn, several important discussions developed upon matters suggested by the topics assigned.

The first question raised was in regard to the manner exercise of cows should be taken during the winter. Prof. C. L. Beach thought turning out from the warm barns into the cold air conducive to the development of tuberculosis, and cited the Holsteins, which, in Holland, are kept up from fall to spring, and are noted for their hardiness, as an indication that exercise in the open was not imperative, but that proper ventilation, brought about by the King or some similar system, was necessary for the vitality of the herd of the future. He would give needed exercise, but not at the expense of exposure.

Dr. C. D. Smead, of Logan, N. Y., spoke of the need of keeping up the muscular tone, and suggested covered barnyards, with windows covered with canvas or cloth, similar to those of the open-front henhouses on the Gowell Poultry Farm, Orono, Me. Cleaner tie-ups for cows was a matter touched upon by nearly every speaker taking part. Bacteriology, with its germ theories, had come, showing the great danger lurking even on a little piece of straw which might fall into the milk, to say nothing of filth too commonly seen in the tie-up, and of cows with unwashed udders. Here came in the need of pails with small openings, and of milk-room well screened from flies, which were heavily bacteria-laden. Inspection was the watchword, and involved the condition of the tie-up, health of the animals, health of those handling milk, and, also, of their families. It would take a peep into the can of the milk pedlar, and into that of the creamery patron, that the latter might be forced to stand behind his own dirt; it would scrape the rough edges of the milk utensils and expose the dirt lurking there; it would discard the cleanest wipers for scalding-hot water, which would dry by means of its heat, and even hinted that it might be well to pry into some refrigerators, as well as making sure that pails and pans were not left out of doors to air over a pile of refuse, as had been frequently found to be the case. Ignorance and carelessness were two contributory causes for these conditions, hence the need for inspection.

Several of the speakers criticised the wasteful handling of the manure. From twenty cows, six months, the manurial product was estimated to be \$371.95. Much of the liquid was lost by lack of absorbents, much of the solids was allowed to heat or to leach away; large streams of rich dark liquid drained off and wasted, the farmer making up the deficit by the purchase of chemicals—a losing proposition, as can be easily seen.

More clover, more intensive cultivation, which, by a proper rotation of corn, oats and peas, or oats and barley, and clover would support a cow to the acre, was advocated by all who touched upon the question, and was practiced by an occasional dairyman.

Two advantages would accrue to the dairymen following these hints thrown out—better quality and increased quantity.

The main thought running through the whole convention was the proposition of cow-testing associations, and more was said upon this than upon any other subject. Several herds that showed the balance on the wrong side of the ledger, by dropping the unprofitable animals, had become paying propositions.

The cry has long been raised that the dairymen were harboring too many "boarders" in their herds, and this organization comes in as a Sherlock Holmes to expose delinquents.

So much has been written upon the subject, and so many speakers have exploited it in the past two years, that its workings are fairly well known. The increased butter product and increased value of the herds where cow-testing associations give undisputed evidence of their value, and backed by the Department of Agriculture, under the leadership of Hon. A. W. Gilman and Leon S. Merrill, the State Dairy Instructor, their introduction into Maine is only a question of a short time. In fact, in a quiet way, two of the dairy sections are pulling the wishbone to see which will have the honor of starting the ball rolling, and making Maine a pioneer State in New England in the establishment of cow-testing associations.

M. B. AIKEN.

## GARDEN & ORCHARD.

### HORTICULTURAL PROGRESS.

Prepared for "The Farmer's Advocate" by W. T. Macoun, Horticulturist, Central Experimental Farm, Ottawa.

#### FIELD MICE AND THEIR HABITS, AND HOW TO PREVENT THEIR DEPREDATIONS IN ORCHARDS.

In a recent number of "The Farmer's Advocate" was published a paper read by the writer before the annual meeting of the Ontario Fruit-growers' Association in 1906, on "How to Protect Trees from Mice." Since thousands of trees are ruined annually by these pests, further information should be of value. A bulletin, entitled, "An Economic Study of Field Mice," by D. E. Lantz, was published by the Biological Survey of the Department of Agriculture, Washington. There are about 165 living species of field mice in the world, of which 78 belong to North America. They have a wide distribution, and outside the tropical zone being found in the greater part of the northern hemisphere. The common meadow mouse, which is the one which does so much harm in Eastern Canada, is found in at least twenty-five States and several Provinces of Canada. Some species of field mice prefer swampy places, while others live usually on drier ground. Some burrow under the ground like the moles, while others make paths along the surface. The nests of field mice are roundish bunches, principally composed of blades of grass. They are usually placed in depressions in the ground in shallow burrows, or are supported on grass stems above the ground. These little nests are very light, but the mice will live in them under the snow and apparently find them quite snug. Under the shelter of weeds or leaves the mice have well-beaten trails leading to their feeding grounds. The trails of some species are almost or quite below the surface of the ground. Most of the nests on the surface of the ground are built for shelter, and the young are produced in more protected places underground. Field mice breed in nearly every month of the year. In mid-winter in cold climates they cease breeding for a time. From four to six litters may be produced by one pair of mice in temperate climates in a year. The number of young produced at each litter varies, from four to eight being usually produced, although the dwarf field mouse is known to produce as many as thirteen young in one litter. It usually takes about twenty days for the mother to bring forth her young. Field mice increase abnormally at certain periods, but the causes for this are not yet clear. In Europe the increase in field mice at certain periods is far more marked than it is in America. Examples are given of some enormous catches there. In 1822, in the district of Zabern, in Germany, 1,570,000 were caught in fourteen days. In the summer of 1861, in the neighborhood of Alskelm, 409,523 were caught. While the field mice are not found in such enormous numbers in America, they increase with wonderful rapidity. The common meadow mouse of the United States (and Canada) is one of the most prolific of our species. Estimating the normal increase at six young, with four litters in a season, and assuming that there were no checks upon the increase, the results are appalling. A single pair and their progeny in five seasons would amount to nearly 1,000,000 individuals. This calculation is under the mark, since it is based on the assumption that the young do not breed until about a year old. The animals, however, mature very rapidly, and the spring young undoubtedly breed in the fall of the same year. If a thousand pairs of mice survive the winter in any neighborhood the potential conditions for a plague are present. If, now, instead of normal reproduction circumstances bring about a considerable increase, both in the number of young at a time and in the number of litters in a season, the probability of a plague is greatly increased; hence the farmer needs the good offices of every creature that preys upon mice to supplement the climatic limitations upon their increase, and to aid in saving his crop.

Some of the greatest friends of the fruit-grower in destroying field mice are the birds and animals which destroy them. Among these are the owls, hawks, shrikes, crows, cats and skunks, most of which should be protected rather than destroyed, as is too often done nowadays. The food of field mice in summer is principally green vegetation and the unripe seeds of grain and grasses. The mice continue feeding on these until the seeds are ripe, after which the ripe seeds form a considerable part of their food, when they can be obtained. In the winter they also feed on bulbs, tubers, and roots and bark of trees. It has been calculated that a single mouse will eat from 24 to 36 lbs. of green vegetation in a year. At this rate a thousand mice would require at least 12 tons of grass and other green vegetation in a year.

It is the common meadow mouse which does so much harm in orchards in Eastern Canada. Most meadows have an abundant supply of these little animals, and if conditions are favorable, or if they are driven out by hunger, they will leave the meadows and go to the orchards. The nearer the soil in orchards approaches the condition of a meadow the more numerous they are likely to be; hence they are worse in sod orchards. They will travel long distances under the snow in search of food, and one is often surprised in spring to see the ravages of mice where no mice were seen in the autumn. The destruction from mice is often noticeable after a winter of heavy snowfall, when, under the protection of the snow, the mice will travel through even well-

cultivated orchards. The methods employed in preventing their depredations and how to treat trees after they have been injured, was dealt with in the November 29, 1906, issue of "The Farmer's Advocate." A plan suggested of preventing the ravages of mice may be mentioned, however, namely: the tramping of snow about the outskirts of a garden to prevent the mice passing under the snow and reaching the trees and bushes on the inside. Tramping about individual trees is often recommended, and the plan suggested of protecting a number at once is a good one. Tramping the snow on each side of a row of currants and raspberries is also suggested. The freer orchards are of weeds the less danger there is from mice. Building paper tied about the trunk and a little soil placed about the bottom is a simple and very cheap method, and will ensure trees being uninjured. If one neglects protecting trees in this way until it is too late, tramping the snow about each tree will often be sufficient. Our closing words are: FARMERS, PROTECT YOUR TREES FROM MICE AND TAKE NO CHANCES.

#### NOVA SCOTIA APPLES IN 1907.

Just a few notes, at your request, regarding the apple situation in the Province for the past season.

Growth.—The continued moist weather of the season, together with the increased attention to cultivation, promoted a vigorous growth, that in a measure warded off disease and gave us fruit of good size and quality, but perhaps not colored as highly as in former years, while almost universal spraying aided the weather in producing clean fruit. The brown-tail moth scare probably indirectly contributed to this sudden increase in spraying. It is to be hoped that the "scare" part of it may continue, if by that means we may get more spraying and better fruit. Owing to the late season throughout, apples matured later than usual, but, probably on account of the rapid and large growth, apples, in many cases, are not keeping as well as usual. The first week in October brought us a gale, but not attended with as much damage as the one in 1906. A heavy snowstorm the third week in October, followed by freezing weather, astonished our growers by the little damage it did to fruit.

Insects.—Of course, all horticultural Canada knows that we have found the brown-tail moth in Nova Scotia. Before this, only two things have aroused the farmers from their accustomed lethargy—murder trials and political campaigns—but the interest in the discovery of this new pest for a time equalled the former, at least. The Department of Agriculture, which, during the past year or two, has wakened from a long sleep, jumped on the thing so quickly that we are led to believe the pest may be kept down, if not totally frightened out of the Province. At one meeting, where the writer advocated strict legislative measures compelling citizens to hunt for and kill the moths and caterpillars, one of the Government officials expressed his belief that more good could be done by holding prayer-meetings, exhorting the people to action. It is hoped, however, that at the coming session of the local Legislature something may be effected besides moral suasion toward the end in view. The other common insects, such as apple worm, tussock moth, hunch caterpillar, etc., have been more in evidence than usual, but, thanks to spraying, have been kept under control.

Picking and Packing.—The tendency has been to pick the early apples too early, partly on account of the temptation to get them on the market ahead of others, and partly, perhaps, because the abundant crop made it necessary to get to work early, in order to get them all housed before severe frosts. The wet weather has made it necessary to get them under cover in any shape, and consequently a greater proportion remain unpacked at this date (Nov. 29th) than in former years. The 96-quart barrel is still the favorite package, and we hope to see the day when this size may be universally used all over North America.

Marketing.—Early reports of the world's crop stimulated speculators to such an extent that many were foolhardy in their buying. During September and early October many whole orchards were sold for from \$2.20 to \$2.50 per barrel, as they came from the trees, unpacked—everything that grew on the tree but leaves; but during the last few weeks it is hard to get a speculator to buy at any price. Now some of them are trying to get the farmers to sell at ridiculously low prices, since the early shipments, both on account of the immaturity of the fruit and the poor quality, gave very disappointing returns. The same system of selling, or shipping through agents on consignment to London and Liverpool jobbers, is still in vogue. Like the penny in the slot, the farmer throws in his barrel of apples, and takes what the machine gives him. Another attempt at co-operative packing and selling has been made at Berwick. It is very quiet. Whether or not the "machine" has killed it, is hard to say. It has