

growing evil of these periodical droughts, recourse should be had to systematic tree planting on a large scale; but, in addition, each farmer had the means within his own reach of materially diminishing the trouble. The chief of these are *irrigation, underdrainage, and deep cultivation*. One cause of the shallow culture which many farms at present received was owing to the light breed of horses, which the "fast" proclivities of the age encouraged. A heavier horse, more adapted for draught, was needed by the farmer. With regard to the first of these remedies, many years must elapse before any general benefit could be expected, and irrigation also was probably far off in the future. But every farmer should make at least a commencement by draining and deeply ploughing. Let the dairyman begin by setting apart a piece of land convenient to the barn—say one acre for every ten cows kept; underdrain it in the most thorough manner; then "go down, down, down with the plough below the gold deposit, enrich it as every dairyman has the ability to enrich it, and seed this early in spring with a liberal supply and general assortment of our best grasses, which will ripen simultaneously." From time to time as means increase and opportunity offers more land should be treated in the same way, till at length the whole farm shall have undergone the ameliorating process, and drought will no longer be feared. Orchard grass was highly recommended as a pasture and forage crop. Land, prepared as above directed, will, when seeded with orchard grass, produce four cuttings of two feet each every season, as long as its fertility is maintained, and the cutting done at the proper time. But at the head of all forage plants for soiling dairy cows the speaker placed lucern, provided the soil and mode of cultivation were suited to its habits. The soil should be a deep rich gravel or sandy loam, naturally underdrained. The roots, penetrating deeply in search of moisture, would soon choke up artificial drains. It may be sown broadcast or in drills ten inches apart. In drills ten pounds of seed are sufficient; but if sown broadcast, sixteen pounds may be required per acre. Next to lucern, where it can be grown Mr. Lewis esteemed orchard grass, and next to it would choose common meadow grass. Corn, so much esteemed by nearly all dairymen, "he regarded as worthless, its cost exceeding its actual value." Whatever kind of grass is used, it is highly important that it be fed, or prepared for fodder, before it has passed out of bloom. The speaker had also found advantage in the partial "wilting" of all forage grasses for soiling.

The adverse opinion in regard to Indian corn elicited a storm of discussion, and met with general condemnation, to which expression was given by the following resolution:

Resolved,—That this convention is of opinion that corn is a valuable product for the

dairy farm, and that we commend it as a forage crop.

Mr. Lewis, in a subsequent stage of the proceedings, considerably modified his statements and admitted that he had been mistaken in regard to the cost of production. By referring again to his farm accounts he found that the poorest corn crop he ever raised did pay. He was still, however, of opinion that other crops were more nutritious, and gave the results from two dairies near his own residence, which were in all respects alike except in the kind of feed used. The one was soiled with grass, the other with corn, the soiling season beginning Aug. 1 and ending Oct. 31. The yield of the grass-fed herd for that time was 90,288 lbs. of milk, and of the corn fed 79,452 pounds.

The evening session of the first day was occupied principally with a lengthened and very interesting paper, by Prof. G. A. Caldwell, on the

Production of Cheese in Foreign Countries.

We must reserve some of the details for future publication, and notice now only the general considerations to which the Professor drew attention at the close of his address, which were as follows:—

1st Some of these methods of cheese-making illustrate in a most interesting manner that intimate connection between the development and growth of mould fungi and the ripening of the cheese; a connection as close and invariable as I attempted to show in my address of last year, as that of cause and effect.

2nd To uniformity in the practice of salting the cheeses after they have been formed and pressed, and without breaking up the curd after it has been completely separated from the whey; the salting being then performed by applying it to the outside of the cheese, either by sprinkling salt over the surface in small doses at a time, which is the more common method, or by immersing the cheese in brine.

3rd. To the heavy pressure that, in most cases, we put on our cheeses. To be sure, the lightly pressed cheeses may not keep so well, but they are intended more for immediate consumption, without transportation to great distances.

4th. To the indications that point to some connection between the presence of ammonia in the air of the curing room, and the process of ripening.

5th To the peculiar circumstances under which the best cheese of France is made, "the king of cheeses," and the possibility of the construction of similar vaults in fissured limestone in our own country.

6th To the fact that some of the best and most highly prized cheeses are made from wholly or partly skimmed milk, so that an additional income is derived from the cream worked into butter.

7th. To the small size of some of the favourite continental cheeses. The Edam

weighs only about 4 pounds, the Gouda 15, the Schälzeiger 5 to 7, the Brie 4 to 7, the Roquefort 4 to 5 pounds, while only two, the Parmesan and Gruyere, are large, like the American cheeses.

8th. To the great variety of cheeses obtained by these variations in the details of cheese-making and the better market thereby obtained for the products of the dairy. Greater variety appears plainly to lead to greater consumption in Europe, and a similar result might reasonably be expected here.

Finally, then, I would point a very long story with a moral. With every variety of soil, situation, climate and consumers' tastes in the great extent of country represented by the American Dairymen's Association, there should be a correspondingly large variety in the character of the productions represented here. There should be something else besides big, round cheeses, weighing a hundred pounds or more, and, though all good when well made, yet tasting about alike.

SECOND DAY.

The first topic taken up on the morning of the second day, by Dr. S. Wright of Oneida, was that of

Factory Buildings and Fixtures.

This paper, also, we must reserve for future notice.

Mr. Willard next introduced the question, "Is there a decline in the amount of dairy products in the old dairy regions? If so, what is the cause, and what the remedy?"

Mr. Willard thought there was a decline in the cheese product, and that bad cultivation of the soil, bad treatment of the cows, and bad management generally were the causes.

The next matter considered was the question,

"Is there any way by which the patrons of butter and cheese factories can receive credit for the milk delivered according to its actual value, and not according to its weight or measure?"

This subject was opened by Hon. H. Lewis, who contended that the present system was unfair, inasmuch as the richer the milk the lighter it weighs, and *vice versa*. The value of milk for making cheese depends on the amount of cream and casein it contains, the proportion of water, its freedom from filth, and its keeping qualities. The first two items can be tested by the lactometer; the last two by setting samples from the can of each patron. He thought this plan desirable and practicable.

After discussion, the following resolution was adopted:—

Resolved,—That a committee of three be appointed to consider the best means of making an equitable apportionment to the patrons of butter and cheese factories, according to the quality of milk and not by weight; and to report at the next annual meeting of the association.