

latter they were required for muscular development, while in the former the nervous system directed them to the production of milk. The good development of the above organs was indicated by deep nostrils, depth of chest, full crops, soft and glossy hair, a large barrel, a skin of good handling qualities, and a moist nose. Round nostrils were objectionable, and a dry nose indicated an animal subject to indigestion. The good development of the nervous system was indicated by depth and breadth of forehead (from the root of the horn to the eyes), a large prominent eye surrounded by a soft chin void of coarse hair, and an absence of coarseness in all parts of the body. The spine (back-bone), containing the nerves, should be large, also the spaces between its upright processes. The size of the udder was of less importance than the size of the surface of its attachment, as indicated by its length and breadth. Having a good animal, the next thing was to take proper care of her, and not compel her to expend her forces uselessly by exposure or bad treatment. Being in a cold atmosphere or drinking cold water materially reduced the quantity of milk. It had been estimated by persons warming the drinking water for their stock, that 10 per cent. of the increased yield of milk would pay for the fuel required to warm the water. Badly-ventilated stables reduced the quantity of milk 10 to 14 per cent. Exciting the animal was also very injurious, reducing both quality and quantity of milk. To the chasing of cows by dogs he attributed half of the tainted milk delivered at factories. He recommended feeding cows all they would want, twice a day, claiming that they, being satisfied, would lie down quietly and chew their cud. No animal should be fed over-ripe hay or straw, as this would give their digestive organs unnecessary work. Concentrated foods should be fed and mixed together with the coarse fodder, for if the former were fed alone only half of them would be digested.

A writer in the London Garden, referring to the well-known fact that new seeds usually germinate more quickly than old ones, says that many old ones will germinate well with heat that would perish in cold ground—a fact which should be borne in mind by those who are testing seeds this year in warm rooms. Among those which may be kept two seasons are named onions, salsify and some others, while lettuce, tomatoes and artichokes will continue good three seasons; cabbage, turnips, spinach, kales, &c., four seasons, and melons, cucumbers and beets for five or six seasons. It must, however, be borne in mind that such rules as these are more or less arbitrary, as much depends on the condition of the seeds and the temperature and dampness of the place where they are kept, and on the condition of the soil which receives them, favorable influences sometimes more than doubling their keeping and favoring or preventing germination altogether. Another good authority says:—"Many vegetable seeds, properly kept, are good to a 'green old age.' For instance, beet seed has been found good at ten years, celery at ten, pumpkins at ten, melon at ten, and seeds of all the melon family are better over than under ten years; turnip four, lettuce three, cauliflower two, beans four and over, cabbage four, peas four, &c. Still, new seeds of all but the melons are best if fresh. Especially is it preferable to get them direct from reliable seedsmen each year than to trust to those sold on commission at the village store. Before planting any seed, whether home grown or from any other source, test each variety before intrusting them to the soil."

The Dairy.

Obituary.

It is with deep feelings of sorrow and sympathy we announce the death of one of our most useful contributors, Professor L. B. Arnold, who departed from this life on the 7th ult., aged 74. It is our opinion that from



his practical and scientific research, the quality and standard of our cheese have been greatly enhanced, and that no person in America has done so much good for the dairy interest.

He has striven bravely against the tide of life. His parents having but limited means, he was compelled to provide for his own education, which he did very energetically and thoroughly, graduating at Union College in 1848. From early boyhood he has been interested in dairy matters, and has for the last 32 years of his life made this important branch of agriculture his special study. He was an indefatigable worker, close student and careful experimenter, which, together with the pleasant manner in which he expressed the knowledge he had gained, gave him the confidence and esteem in which he was held by all who knew him. He has written several valuable works which have gained for him an almost world-wide reputation. Every dairyman will regret the demise of this useful gentleman. But his works live after him.

A Discussion on Test Churns.

At the late Wisconsin State Dairymen's Association, the merits, or rather the demerits, of test churns as an instrument for testing milk delivered at factories, for the purpose of paying according to its quality—which is considered by the dairymen of that State almost indispensable for the welfare of the factory system—was thoroughly discussed.

Mr. Smith, testing the various known milk-testing instruments, reported to this meeting:—"Up to the middle of August no milk-testing apparatus (tested by him) that required long tubes of small diameter gave any reliable results, while the churning of half-pound samples of quite acidified milk, in pint fruit jars, and weighing the butter, though not considered perfect, justified trials on a larger scale." In these tests some of the grand totals of the test churn agreed very closely with the butter realized in the factory churn; but in the separate tests making up this grand total there were considerable deviations from the large churn, thus showing that although on an average it might give fairly reliable results, it did not serve the purpose for which it was intended, viz., to give justice to each patron.

Hoard's Dairyman, in reporting this meeting, says:—

It appeared from chemical testimony that there is more liability of error from defective churning, as to the integrity of the sample, by churning in small, unphilosophically constructed and shaped vessels, than from all other causes, and the error increases as the churn diminishes in size.

Dr. Babcock has found that the unequal viscosity of the milk defeats the completeness of the churning. * * * He did not think it possible for the small tubes to churn out as much fat, proportionately, as a pint jar with larger sample; but even the jar did not churn its contents exhaustively. He could not get as near to the total fat as shown by chemical analysis, with the small churn as with a larger one; nor would the small churn get the per cent. of fat uniformly.

Butter-Making in Normandy.

This Province of France has gained a world-wide reputation for the excellent quality of butter it produces. Their method of manufacture has been described by A. M. in the Farming World, as follows:

One cannot travel far through France without observing how important a place the dairy industry holds in the general agricultural interests of the country. It is, however, in the northern departments that dairying is most extensive and most skilfully practiced. In the south the culture of the grape holds the premier place. In the north Normandy includes the most of what in Scotland we would call "the dairying counties." Perhaps no country is better adapted for carrying on this industry. The soil, belonging generally to the Jura formation, is a very good mixture of limestone and clay; and the climate, benignly influenced, like our own, by the Gulf Stream, is moist and mild. In summer the temperature is never very high, neither is it very low in winter.

Dairy practice varies considerably in the five departments of Normandy. In the north and east of the Manche, and in the west and north of Calvados, attention is chiefly devoted to butter-making; whilst in the other departments the manufacture of cheese, chiefly the well-known Camembert, is the staple form of the industry. The cows in most favor are those of the Cotentin race, big, heavy animals, and good milkers. It is the custom to house the cattle in winter, when they are fed largely on hay with a very moderate allowance of mangolds, turnips, and carrots. In summer the cows on not a few farms never leave the pasture fields—being milked where they graze—indeed, no other feeding is necessary when pasture is so rich and abundant. The pastures of Normandy have not a little to do with the excellence of its dairy produce.

The butter imported into this country from Normandy is generally consigned from a factory. But at these export factories the butter is not made. The factory system of butter-making has as yet but a limited hold in Normandy. The butter is made at the farms—not large farms either, as a rule—put up into lumps, which are collected by the large merchants, classified according to quality, and merely mixed together at the factories.

On a Norman farm the dairy is almost invariably a presentable building, whatever may be the condition of the general farm steading. It consists, as a rule, of two apartments, a milkroom and a workroom. Round two or three of the sides of the milkroom runs a trough, two feet deep by two feet broad, along which a slow current of pure cold water continually flows. This has a twofold function: to equalize the temperature of the room, and to reduce quickly the temperature of the new milk. The cows are milked morning and evening, and in some cases three times a day. When the milk is taken to the dairy it is first strained and then poured into earthenware pails, very similar to a deep Scotch "crook." These pails are then set in a row in the water trough in the milkroom, and in a short time all trace of the animal heat is gone. The system of "setting the milk" is thus rather a deep than a shallow one. In some of the best