

The Dairy.

The Annual Meeting of the Western Dairymen's Association.

The annual meeting of this body was held in the City Hall, London, commencing on Wednesday, January 13th, and continuing until the following Friday. There was an unusual large attendance from all parts of the western peninsula.

Mr. Thos. Ballantyne, M.P.P., of Stratford, formally opened the proceedings. Professor L. B. Arnold, of Rochester, N. Y., then read an interesting essay on "The Secretion of Milk." In entering upon his discourse, the talented speaker referred to the importance of this subject, not only to the dairymen, but to the public at large, as affecting their interest and their health. He proposed to speak of the changes evolved in the process of transforming the food taken into the cow's stomach into milk—a most wonderful process indeed. He then proceeded to detail the operation of the digestive organs, comparing the appearance of the chyme in the stomach when properly digested to that of cheese in a liquid state, and stating that the fat and albuminous matter is simply transformed into a soluble state that is readily taken up into the absorbents of the stomach and the blood. It was in this manner that vegetable matter, such as peppermint, etc., was taken into the secretions so quickly, and he had known vegetables to appear in secretions of the kidneys within fifteen minutes after eating. The matter of albuminoids and carbo-hydrates was taken up, and the learned Prof. showed that as the plant developed it was more hard of digestion, and hence green food was more easily digested than dry—the gastric juices having more effect on the former. All flesh forming food contains nitrogen, albumin (protein compounds mean the same thing) and form tissue right for the building up of the system, and must exert an influence in the milk of the cow.

In comparing food he said the proper proportion of the nitrogenous, and carbonaceous, and mineral should be supplied to the animal economy, for milk and meat have the same composition. If the mineral and carbo-hydrates, etc., etc., are not supplied, a waste takes place; one wastes the other, and becomes a disturbing element; and hence the study of the composition of food should be of the greatest importance to dairymen and others. He considered silos a mistake, as ensilage contained only one part of flesh-formers to twelve times as much carbo-hydrates—an improper proportion of these elements; and the consequence was that cows fed on this did not do near as well as if given a proper proportion for flesh and milk producing food, such as clover, wheat, bran, for flesh; or oil cake and cotton seed for fat. If dairymen had a little chemistry on this point—they need not be analysts—it would save them dollars and dollars. Economy should be studied that the cost of milk could be reduced to meet the cost of production. In this the dairyman's prosperity consisted. The process of nutrition and fetal development was explained. Milk was the result of maternity. A lucid explanation was made of the conditions of the udder and milk ducts after conception and parturi-

tion, with the physiology of the blood vessels after the new conditions of maternity. If a cow was not milked the pressure would stop the action of the artery, and what a farmer wants is to keep these arteries in active condition by continual milking. He should try to get as much blood to pass through the udder, by vigorous circulation, as possible. Whether the bag is full or not, employ as great an influence mechanically on the flow of milk as you can; and to this end systematic milking should be done; a drop of fluid left back had an injurious effect. Farmers do not milk regularly, and by allowing a cow to go too long the pressure was such that it impeded the flow of blood to the mammary glands. Milking machines were not recommended, from the fact that they worked on the pneumatic principle of exhausting air from the small tubes in the teats, and thus allowed atmospheric pressure on the udder to force out the milk. No milking machine could supply the place of hand milking; and he gave up all hopes—with the present light he had—of seeing a milking machine a success; hand milking was better than nature on this account in producing a flow of milk. Dairymen, it was contended, paid no attention to the anatomy and physiology of an animal. The summer season was alluded to as being the time when there was not a supply of food, and proper nutrition and water were not had in a hot sun; and as a general rule the nutriment was only sufficient to support life—hence there was a contraction of the udder, and here was where the losses came in in dairying and the secretion of milk. Preparations should be made to supply this in the way of a soiling crop, and food should be raised such as green crops, or ensilage or even hay and meal, and thus a good supply of milk could be obtained. Thus a continual supply of food would keep up a healthy action of the anatomy of the animal, and a permanent enlargement of the mammary glands, to which he had alluded. The divisions and anatomy of the secretory system were again alluded to. These, he said, would be transmitted to posterity. Deformities of teats, &c., were hereditary. The whole circulatory system was explained. The best authorities agreed that the fat was immediately carried to the blood vessels and assumed the shape of cells, and from these again passed into the milk ducts and mammary glands, the latter being composed of an immense number of cavities, or cells. These are surrounded by blood vessels, from which the protein of the milk exudes and is absorbed into the interior of the cells through small tubes. These were the fat globules found in cream. These cells were analogous to rennet cells. We were, however, left in the dark with regard to the development, but the globules in the blood was the only rational theory; but the decomposition took place in the udder, and where the separation was made. The address was of a high order of merit, and was listened to with marked attention throughout.

In answer to a number of questions, Prof. Arnold said:—The cause of the stoppage of milk in the teat is due to a species of inflammation that occurs in the udder just above the teat. The teat is hollow, or generally considered so, and right above it is a diaphragm and a hole larger than the teat. There is also

a series of minute cells or strings connected with the abdomen, so that when the cow draws up her abdomen this bundle of fibres is pulled up, and as the inflammation increases the hole is closed up entirely. I have tried a needle, flattening it, and when the teat is full, working it carefully up through, so as not to injure the structure. This would do for a time, but it might grow up again. Another way is by taking an ivory or silver tube, crowding it through, and having a bulb on the end and a small neck, so it could press on the teat to hold it, and this would gradually enlarge. He thought food could be made more digestible by steaming, cooking, or fermenting. But there would be a sacrifice, and it would be questionable if the result was sufficient for the sacrifice. In steaming food you do the same as in the process of digestion. In cooking you prepare it for digestion, but the aroma flies away and the cow loses something through the loss of this volatile oil. In fermenting there is a bigger loss, for this process makes the nutritious properties become loose from each other and you lose a portion of the heat—just what the animal would have used in raising animal heat, the most digestible part. It was a question to be settled whether the loss could be balanced against the gain, and that was one he would not undertake to decide. He contended that to meet the emergencies of July and August, and dry weather, perhaps nothing as a whole is better than corn fodder where you have a proportion of grass to feed. The best thing I have ever used was a combination of green clover and corn fodder, which is better, and gives more satisfaction. Another good thing is to sow oats and peas, one part of the former to four of the latter, cut early and it can be fed all fall and winter, and is excellent.

Q.—I understand that the less milk there is in the udder the more rapid is the secretion of milk. Would it not pay better, then, to milk the cow three times a day?

A.—In many cases it would.

Mr. Benj. D. Gilbert, of the Utica, N. Y., Herald gave a humorous and instructive address on "Mites of Cheese and Lumps of Butter," in the course of which he alluded to the rapid growth of dairying in Ontario. He gave a number of valuable statistics and condemned "corners" in cheese, and advocated the universal law of supply and demand as a guide. He contended that our dairymen are not able to make all the good butter for which there is a demand. Moreover, this butterine takes the place of a class of butter which never should be made. But it sells readily, because purchasers prefer it to the lower grades of butter. The competition of these imitations causes butter makers to improve their products. The State had failed to stop the sale of the imitations, and he suggested its regulation by the general Government.

Mr. Robert McAdam, of Rome, New York, gave a well prepared essay on the "Demands of the Cheese Trade, and Defects in the Supplies." With regard to the supplies he said that out of an importation of 80,000,000 pounds of cheese and butter last year, the supply from Canada and the United States formed only a limited portion of the supply. He said there