

*Dairy Calf Nutrition.*—In the past year a study was made of the growth development and health of dairy calves reared on two different levels of skim-milk. The object of the work was to determine a satisfactory and economical level of skim-milk feeding for calves given whole milk for three to four weeks, and then skim-milk and good pasture only until weaning. In previous years Jersey calves had been raised satisfactorily without meal when skim-milk was fed daily on the basis either of 12 or 15 per cent. of the live-weight with maximum amounts of 2 gallons. The two levels contrasted in the 1945-46 season were 15 and 10 per cent. with maximum daily amounts of 3 and 2 gallons respectively. The results showed that under the conditions of the experiment—*i.e.*, where the young animals were well managed and rotationally grazed over good pastures—feeding skim-milk on the basis of 10 per cent. of live-weight daily with a maximum of 2 gallons for Jersey calves resulted in the production of fine, healthy animals which were in no way inferior to those which had received the higher level of skim-milk. The data which has been accumulated in the study of dairy cattle growth at the Dairy Research Institute enables a feeding schedule based on live-weight to be readily converted into one, which may be of more practical application, based on age.

*Hormone Studies.*—The influence of thyroid-potent iodinated casein on the dairy cow is receiving further study. In particular the effect on the cow's own thyroid of feeding this material is being observed. Making use of cheesemaking equipment, another large batch of thyroprotein has been prepared in order that supplies of this material may be available as required for experimental work.

It has been shown that the thyroid hormone may influence the yield and fat content of milk. However, little is known about its effect on the non-fatty solids in milk. As thyroid activity tends to be relatively low during hot weather, and it is under these conditions that the solids-not-fat content of milk is frequently depressed, a study is being made of the variation in non-fatty solids of milk with experimentally produced differences in thyroid activity. High thyroid activity is being stimulated by feeding thyroprotein to milking cattle, and low glandular activity by the administration of thiourea which blocks the formation of the thyroid hormone.

*Miscellaneous.*—(a) *Dairy Cattle Growth*: In continuation of a long-term study, the growth-rates of young Jersey and Friesian stock and the variation in body-weight of mature cows of the same two breeds have been followed and recorded during the 1945-46 season.

(b) *Mastitis*: As clinical cases of mastitis occurred in the Massey College dairy herds they were treated by irrigating the affected quarter with anti-biotic solution. This treatment was most successful in cases of streptococcal mastitis, but only partially effective where the infection was staphylococcal. In order to determine the penetration of solutions used in this way in the treatment of mastitis, udders from cows slaughtered soon after irrigation are being examined.

*Pasteurization and Bottling of Milk.*—The Institute has continued on behalf of the Department of Health to pasteurize and bottle milk supplied to schools in the Manawatu district.

*Dissemination of Results of Work.*—The annual meeting of dairy-factory managers and first assistants was held at the Institute on 8th, 9th, and 10th May. This was attended by about a hundred representatives from all parts of the Dominion. Addresses were given by the principal research workers on work completed and in progress. Discussions arising from these were most useful to both those engaged in the manufacture of dairy products and the research workers.

As indicated in last year's annual report, the Institute during the year started the publication of a bulletin to keep those engaged in the manufacture of dairy products in touch with new developments originating both in New Zealand and overseas. This has been named the *Dairy Research Institute (N.Z.) News Circular*, and is being issued quarterly. Two issues already published have been well received.