Dairy Laboratory, Wallaceville.

The Division's Laboratory at Wallaceville, under the charge of Dr. G. M. Moir, has provided an increasingly useful service for routine testing of samples forwarded by factory-managers, Instructors, and Graders. During the past year the total number of samples received exceeded two thousand, which is fully double the number dealt with in the previous year. This increase is chiefly due to the very large number of butters received for bacteriological testing, and also to more samples of butter being received for chemical testing.

The testing of cheese-starters for contamination, which has been prosecuted for several years, has been allowed to lapse somewhat during the past season, but it will be desirable next season to resume the systematic testing of starters as in former years. Similar testing of butter-starters indicates that many are satisfactory, but continued efforts are necessary to insist on the improvement of those which are contaminated by careless treatment in the factory.

The bacteriological examinations of butter which were begun about eighteen months ago have been considerably extended during the past season, and samples from both Auckland and Wellington have been regularly tested. Last winter the opportunity was taken of checking the reliability of the methods by other more elaborate tests. In this way the new methods now regularly used have been placed on a firmer basis. These methods are an outstanding advance upon anything which has hitherto been attempted for ascertaining the bacteriological condition of butter, as regards both numbers and types of germs present.

The results obtained indicate that although a fair proportion of the factories maintain a satisfactory hygienic standard many are only average, and fully 20 per cent. are at some time or other unsatisfactory. In most cases this last condition is probably due not so much to visible dirt about the plant as to inadequate steam sterilizing. Some tests which have been done upon samples of pasteurized cream suggest that the bacteriological standard which has been tentatively adopted during the past season is not unduly exacting; in fact, the experience so far obtained suggests that, although only a few factories have hygienic conditions, many could achieve a distinctly higher standard in this respect.

Only a small number of samples of unsalted butter have so far been tested by these methods. Scarcely a year passes without evidence that serious contamination is the cause of the periodical failures which occur with unsalted butter. The testing of every churning of unsalted butter for bacterial content may not be practicable, but if the privilege of making unsalted butter were confined to those factories which not merely produce high-grading butter, but also maintain a high standard of bacteriological cleanliness, the risks of the unsalted-butter trade could be considerably diminished.

The laboratory has continued to test samples of factory water-supplies, particularly those used for washing butter. Although the number of waters so tested in the past season has been quite small, cases have occurred where the water was found to be causing defects in the produce. Suggestions which have been made in several cases have enabled the water-supply to be considerably improved. If time permits it is hoped to extend considerably this service to the industry during the coming season.

The principal chemical work of the laboratory during the past year has been the examination of butter for metallic contamination, which adversely affects its keeping-quality. After much careful investigation a simplified process has been devised which enables the iron content of butter to be accurately determined, starting with as little as ten grams of butter and working in the simplest glassware. In similar fashion improved methods for accurately determining the copper content of butter have been evolved and promising results obtained. As both these methods are in every way ahead of past procedures available for the purpose, a considerable number of samples have now been tested for their iron and copper content. The great majority of creamery butters have an iron content well below the maximum desirable figure of 1·5 parts per million, but in regard to copper a higher proportion of samples exceed the desirable maximum of 0·2 parts per million.

During the past season facilities provided in the Auckland testing-room have enabled some useful work to be carried on there, chiefly the pH testing of butters to assist in controlling the use of too much soda for neutralizing cream. With the co-operation of the Instructors it is hoped to eliminate the unsatisfactory neutralizing practices which prevail in some factories.

Legislation.

The principal legislative measure relating to the dairy industry passed during the year was the Primary Products Marketing Act, which came into force on the 15th May, 1936.

Two amendments (Nos. 4 and 5) to the Dairy-produce General Regulations, 1933, were gazetted during the year. So many amendments have been necessary and such important changes made that it has been considered desirable to consolidate the Dairy Industry Act and the Dairy-produce General regulations, and this work is now in hand.

Prosecutions.

In two cases it was found necessary to take legal action for breaches of the Dairy Industry Act. Both concerned cheese-factories, and both were brought against the factory-manager. In one case curd or inferior cheese had been incorporated in cheese of otherwise finest quality, while the other was a case where a grade other than its true grade had been assigned to milk received for cheesemaking. In both cases convictions were secured and fines imposed, while in the first-mentioned instance the manager was deregistered by the Factory Managers' Registration Board.

Labour Department Subsidy on Dairy Buildings and Equipment.

The administration of what is known as Scheme B 2, whereby financial assistance was offered by the Government to dairy companies and dairy-farmers in respect of dairy buildings and equipment was transferred during the year from the Unemployment Board to the Labour