

especially at Auckland. The gathering of information about the methods and apparatus required has taken some time, and more attention will be needed as the work develops. Besides the simple compositional analysis of the product, it will be necessary to devote a considerable amount of time to methods capable of indicating the actual quality of the product, including particularly its ability to retain its quality during storage. As distinct from methods for compositional analysis, which are fairly straightforward, methods for assessing and controlling the actual quality are not so well known, because of various factors associated with trade secrets of manufacture. If the essential points of this undisclosed information are to be obtained to avoid the manufacture of an inferior product, there is urgent need for the employment of additional staff who have the highest chemical and bacteriological qualifications for undertaking the required investigational work and for linking it up with factory practice.

ANALYTICAL TESTS

pH Testing.—During the year 5,992 tests were made, compared with 5,095 the previous year, an increase of 897. The testing was done at nine grading-stores and the number of tests for each was as follows: Auckland, 3,179; Wellington, 1,143; Patea, 290; New Plymouth, 823; Wanganui, 174; Lyttelton, 227; Gisborne, 100; Napier, 33; Bluff, 23. The purpose of these tests is to reveal any tendency toward over-neutralization, which would impart a flat or alkaline flavour to butter.

Bacteriological and Chemical.—The number of samples from grading-stores submitted to chemical and bacteriological examination was as follows: Auckland, 3,229; Gisborne, 172; Lyttelton, 358; Patea, 316; New Plymouth, 823; Wellington, 1,075; Wanganui, 119; Napier, 53; making a total of 6,145, compared with 5,506 for the previous year. As in the past, all samples from ports other than Auckland were forwarded to the Division's Dairy Laboratory at Wallaceville for examination.

Moisture.—Some 120,999 churnings of butter were tested for moisture, and of these only 0.24 per cent. were found to exceed the legal limit of 16 per cent. Churnings tested during the previous year totalled 120,558, of which 0.25 per cent. were found to be too moist. The average moisture content of New Zealand butter graded for export during the past season is estimated to have been 15.684 per cent. This is a most satisfactory achievement and reflects credit on buttermakers for the skill exercised in the operation of manufacturing equipment.

Salt.—Samples of butter tested for salt totalled 119,879, of which only 0.06 per cent. failed to comply with the regulations. For the previous year 120,115 samples were tested, 0.05 per cent. being found to infringe the regulations.

FARM DAIRY INSTRUCTION

During the year, Farm Dairy Instructors made 117,658 visits of inspection and instruction to supplying dairies, an average of 1,548 visits per officer.

The percentage of milking-sheds classified as good was 19.87, with 54.12 in the fair class and 26.00 as bad; 24.48 per cent. of milking-machines were classed as good, 50.69 per cent. as fair, and 24.82 per cent. as bad. It is evident from these figures that the sanitary conditions of many sheds and machines could be improved. New milking-sheds erected during the year totalled 1,141, and the number substantially reconstructed was 838, compared with 1,109 and 990 respectively for the previous year.

Repairs and renovations to milking-sheds have again been hampered by the shortage of cement, and to ensure that quantities which were available would be utilized to the best advantage priority certificates were issued by Farm Dairy Instructors in accordance with the urgency of the work to be done. This practice was the cause of criticism in some districts, but generally the scheme worked very well.