

quality. The Market Milk Instructor paid visits about every three to four months, and when there gave the plant, operations, and quality control close examination, following this as necessary with practical instruction.

Milk-treating Houses.—Instructional work by the officers of the Division has resulted in a definite improvement in the operation of various depots during the year. Efforts generally have been directed toward improving methods of plant operation and sterilization, and this limitation has been enforced by the fact that many depots are very poorly equipped and in several cases need closing down and rebuilding and re-equipping.

Efforts have also been hampered by the almost total lack of laboratories in the milk-treating houses—in the thirty-nine depots in the Dominion there are only four properly equipped and properly staffed laboratories. Despite this handicap, regular methylene-blue testing has been adopted in several of the depots. Where testing was already being carried out, check testing has been included in the work done by the Market Milk Instructor.

Grading.—Milk produced for town milk consumption is not subject to any system of compulsory grading and, apart from the unsatisfactory chemical quality of quite a lot of milk in the Canterbury and Otago districts, the general hygienic quality of much of the town milk in both Islands reflects the lack of a quality incentive. After instruction and encouragement to several of the milk-treating-house managers, testing of the incoming raw-milk supplies was carried out regularly and carefully. The results enabled the managers to assist the Live-stock Division Inspectors in improving the supply from many farms, while also giving the managers "case histories" of some of the regularly unsatisfactory suppliers.

Technical.—The year brought a general decision to change from cardboard disk bottle-capping to aluminium capping, and practically all new filling-machines on order for this country are being equipped to handle this new type of cap. Assistance has been freely given to the trade in organizing for the change-over.

The tendency to change from the "holder" method of pasteurization to the "high-temperature short-time" method of pasteurization is noticeable, and in view of the lead given by other countries the trend is probably justified. The "holder" method continues in favour where small depots are concerned because of the economy in first cost of batch pasteurizers.

ANALYTICAL TESTS

pH Testing.—During the year, 5,095 tests were made, compared with 4,841 the previous year, an increase of 254. The testing was done at eight grading-stores and the number of tests for each was: Auckland, 2,525; Wellington, 1,110; New Plymouth, 906; Wanganui, 214; Lyttelton, 188; Gisborne, 84; Napier, 50; Bluff, 18. 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, 2,505; Gisborne, 298; Lyttelton, 387; New Plymouth, 906; Wellington, 1,191; Wanganui, 182; and Napier, 37; making a total of 5,506, compared with 4,659 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 120,558 churnings of butter were tested for moisture, and of these only 0.25 per cent. was found to exceed the legal limit of 16 per cent. Churnings tested during the previous year totalled 113,648, of which 0.28 per cent. was found to be over-moisture. The average moisture content of New Zealand butter graded for export during the past season is estimated to have been 15.710 per cent. This is a most satisfactory achievement and reflects credit on buttermakers for the skill exercised in the operation of manufacturing equipment.