Salt.—Samples of butter tested for salt totalled 120,115, of which only 0·05 per cent. failed to comply with the regulations. In the previous year 113,365 samples were tested, 0·08 per cent. being found to infringe the regulations.

Dairy Laboratory, Wallaceville

During the past year every effort has been made to carry on the laboratory work so as to provide assistance to the instructional and grading services of the Dairy Division. In view of staff changes it has been found more profitable to restrict the variety of work being done and concentrate on doing larger numbers of certain types of samples. The total number of samples dealt with was 3,740, of which 308 were chemical and 3,432 were bacteriological, the latter figure showing an appreciable increase over that for the previous year. The corresponding figures for the previous year were: total, 3,023—chemical, 306; and bacteriological, 2,717.

Chemical.—The majority of chemical samples were butter and cream to be examined for copper and iron content. Special attention has been given to whey cream and butter, in which metallic contamination is often excessive. The results obtained provide valuable information for Instructors to make use of in dairy factories.

A small number of water samples have been chemically examined and advice given about treatment where that is desirable. Interest in farm water-supplies appears to be increasing, and there is undoubtedly scope for more advisory work of this nature to assist Farm Dairy Instructors and bring them in contact with the Laboratory.

Bacteriological.—As in previous years, the principal bacteriological work has been the examination of butter samples, which are sent regularly from the dairy-produce grading-stores. Small numbers of starters, water, and cream samples have also been tested. The butter results show that some factories regularly clean their equipment well enough to achieve low bacterial counts, but the number which do so is rather small. In many factories the standard of sanitation as revealed by the bacterial counts leaves room for improvement, especially in the case of quite a number of factories which often make butter with very high counts.

Bacteriological analyses have been made on a small number of dairy factory water-supplies. In addition to the usual analyses, careful examination has been made for the presence of members of the *Pseudomonas* group of bacteria, some of which are able to cause serious defects in butter, especially *Pseudomonas putrefaciens*, which causes surface taint or "rabbito" defect. Though this particular organism has not been found in any of the waters examined, several samples have contained closely related types which usually grow slowly at low temperatures and are likely to produce undesirable flavours.

New Buttermaking Processes

In the previous financial year orders were placed by the Government for a Senn machine from Switzerland and an Alfa-Laval plant from Sweden with a view to their trial under New Zealand conditions. Both these new processes involve fundamental differences in the manufacture of butter compared with orthodox technique. Because of delays in manufacture, the Senn machine has not yet been delivered, but it is expected that it will arrive during next spring. The Alfa plant arrived during the early spring of 1947 and was installed in the Waharoa factory of the New Zealand Co-operative Dairy Co., Ltd. The trials of these plants are under the control of a Buttermaking Processes Committee, comprised of representatives from various sections of the dairy industry, and the operational control is exercised by technical and scientific officers from the Dairy Division and Dairy Research Institute working under a technical sub-committee. The whole aspect of the trials of these new processes is one of co-operation between the dairy industry and the Government, the Government having