The use of the vacreator for the pasteurization of cream appears to increase the fat that passes into buttermilk by about 0·3 per cent. to 0·4 per cent. of the total fat in the cream received at the factory. The increase is probably due to a measure of disruption of the fat globules in the passage of cream through the vacreator.

(*d*) *Unsalted Butter* (Dr. W. J. Wiley).—The deleterious effect of high acidity on the keeping quality of salted butter is well known. In cold store an acid salted butter gradually acquires a stale flavour which progresses through fishiness to tallowiness. Unsalted butter, however, does not develop a fishy taint, and the effect of acidity on such butter is not well established. Some authorities claim that a high acidity actually improves the keeping quality of unsalted butter, but it is not apparent why there should be such a radical difference between salted and unsalted butters. Accordingly, a series of experiments has been commenced to investigate the deterioration of unsalted butters during storage.

(*e*) *Wrapping and Packing of Butter* (C. R. Barnicoat).—The study of the results of investigations on the wrapping and packing of butter has now been completed. Some publications on the subject are now in the press. It has been shown that a good grade of parchment is a more satisfactory wrapper than most of the alternative materials such as waxed paper, greaseproof paper, metal-coated paper, and cellophane (both white and coloured) which have been submitted to the Institute for examination. Parchment backed with aluminium or tin foil gave better results than parchment alone, but it was found that tin foil needed protection from the frictional action of the wood of the box. The price of tin-foil wrapper is prohibitive, but as a result of the Institute's investigations a wrapper made of aluminium foil sandwiched between two layers of parchment has been developed. Under experimental conditions this wrapper gave excellent results in minimizing the development of "primrose" colour and of "toppiness" on the surface of the butter. During the past season this wrapper has been used to some considerable extent by commercial factories.

The Institute's investigations on the packing of butter in tins have shown that butter stored in tins, either at atmospheric air pressure or at reduced air pressure within the tin, does not develop "primrose" colour on the surface, and that there is in general a slight preference by graders for tinned butter on the basis of its flavour, when the butter is examined immediately after removal from the containers. The advantage, however, was not sufficient to be reflected in higher grading scores allotted by the graders to the butters. When the butters had been held out of the containers for seven to twelve days the advantages of packing in tins were for the most part no longer apparent. In the storage of patted butter there appeared to be some slight benefit from the use of reduced air-pressure within the tin. The benefit is probably derived from the effect of the atmospheric pressure outside the tin in causing a very close contact of the parchment wrapper with the surface of the block of butter. The use of a tin container appears to give definite advantages when butter is to be stored at "chill" temperatures, but the holding of butter for any length of time under these conditions should only be practised where freezing temperatures are not available, and should not be adopted in the transportation of export butter.

The Director (Professor Wm. Riddet) was awarded a travelling grant by the Carnegie Corporation of New York for the purpose of visiting the United States of America and European countries. This grant was supplemented by others from the New Zealand Dairy Board, the Meat Board, and the Government. After leaving New Zealand in February, 1936, he visited leading dairy colleges and research institutes in the United States of America, Canada, the United Kingdom, the Netherlands, Denmark, and Sweden. He also made a careful survey of the quality of New Zealand products in overseas markets and made useful contacts with both scientific and commercial institutions. While in England he attended the Commonwealth Scientific Conference as representative of the Council of Scientific and Industrial Research. On the return journey to New Zealand he made exhaustive inquiries regarding the manufacture of ghee in Bombay district and the prospects for the sale of New Zealand dairy produce there. During his absence Dr. H. R. Whitehead deputized as Acting-Director.

Staff Changes.

Mr. D. F. Sawers, who had been principal cheesemaker on the staff of the Institute since its inception, left to join the staff of the Dairy Division, and his place was taken by Mr. E. Sawyer. Mr. J. A. Singleton, who had been buttermaker for some time, left the staff to take up a post as manager of a commercial butter-factory, and his place was taken by Mr. J. O'Dea. Mr. J. N. Hodgson, dairy husbandman, joined the staff of the State Advances Corporation, and Mr. I. L. Campbell was appointed to this position in October, 1936.

Mr. C. R. Barnicoat was awarded a Commonwealth Fund Scholarship and was granted leave of absence for two years as from September, 1936, to take up special studies at the University of Minnesota. Mr. A. J. Wood, a post-graduate student at the University of British Columbia at Vancouver, arrived in November, 1936, to take up special studies on lactic organisms. This is an extension of work which has been in progress at Vancouver by Dr. Eagles and co-workers for a considerable period of time. In accordance with a reciprocal arrangement made between the Australian Council for Scientific and Industrial Research and the New Zealand Council of Scientific and Industrial Research, Dr. W. J. Wiley was seconded by the Australian Council to undertake research work at the Institute. Dr. Wiley entered upon this work in February, 1937, and is engaged upon a study of the keeping quality of unsalted butter.

Dissemination of Research Results.

As in past years, the Factory-managers' week was held at the Institute in the last week of April. This was patronized by a large number of factory-managers from all parts of the Dominion, and there was much useful discussion on the results of work carried out. A number of public addresses