programme for the building industry be started now. In addition to dealing with technical problems and materials in connection thereto, it will be the province of the Committee to consider the conditions that will provide the maximum productiveness and use of the building industry in the immediate post-war period, consistent with the provision of national and regional plans, a balanced production for all industries, the welfare of those employed in the building industry, and the development of good building design and amenities.

It is realized—

(1) That the establishment of a Building Research Station in New Zealand is not practicable during the war period;
(2) That meantime maximum use of available testing and research facilities and staff, both in Government and non-Government organizations, will need to be made; and
(3) That the organization which is now being developed will need to be reviewed after the war.

The Committee's first task is to survey the problems involved in their order of reference and to decide upon the best methods of attacking them and the lines along which research work should develop. The wartime appointment of an Acting-Director of Building Research and a graduate assistant has been recommended by the Committee as a first step towards the establishment of a research staff and to assist the committee in its preliminary surveys. It is proposed also to take appropriate steps to secure close liaison with the British Building Research Station at Watford.

DAIRY RESEARCH INSTITUTE (N.Z.)

Dairy Research Management Committee.—Mr. A. Morton (Chairman), Prof. H. G. Denham, Messrs. T. C. Brash, C. H. Courtney, G. A. Duncan, H. E Johnson, A Linton, A J Murdoch, J. Murray, W. E. Scott, G. M. Valentine; Secretary, F. R. Callaghan; Director, Professor W. Riddet.

Investigations during the year mainly embraced the production and utilization of dry butterfat for creamery and whey butter, alternative methods of disposal of unexportable whey butter, continued study of loss of activity of starters in cheese-factories, the control of cheese-mites, and studies of the manufacture of cheese and milk production.

Production of Dry Butterfat.—Investigations completed in 1941 indicated that dry butterfat could be prepared from butter by a simple and inexpensive process whereby flavour and vitamin content was maintained and deterioration avoided in storage at atmospheric temperatures. Dry butterfat could also be exported in non-refrigerated space without loss of quality.

Towards the end of 1941 a pilot plant capable of dealing continuously with approximately 1 ton of butter per hour was set up at the Institute, and, following favourable reports from a consignment of dry butterfat sent to Great Britain, the Marketing Department arranged for the establishment of a full-scale commercial plant at Auckland. During the period of construction of the commercial plant a substantial order for dry butterfat was received from the United Kingdom Ministry of Food, and to supply part of this the Institute's pilot plant was maintained in operation and up till June, 1942, had converted some 1,700 tons of butter into dry butterfat. The staff of the Institute were directly concerned with the equipment of the commercial plant of the Marketing Department. Most of the plant in this factory comprised equipment which could be used in dairy factories, but it was necessary for new equipment to be designed by Dr. F. H. McDowall, of the Institute staff, and by Mr. H. L. Murray, of Murray Deodorizers, for certain stages of the processing. Briefly, the process consists of melting butter by the direct impingement of live steam, the partial separation of the melted fat from serum and solids-not-fat by gravity, further removal of these by centrifugal separation in cream-separators, more complete extraction of moisture from the fat as it flows continuously through a dehydrator under vacuum, cooling the dry fat in a water-cooled rotary cooler, and packaging it in hermetically-sealed tin containers of 39 lb. capacity by a simple method that avoids the trapping of free air.

The output of a commercial unit amounts to some 5,000 tons of butterfat per annum.

The development of the dry-butterfat-extracting process has made a valuable contribution to the war effort and to the welfare of the dairy industry. It has increased the supply of butterfat available to overseas consumers, without decreasing its nutrient properties. It has prevented the accumulation in cold stores of a product that would markedly deteriorate in long storage, and made the stores available for other products. It has enabled dairy companies to continue the separation of butterfat from whey, thereby avoiding drainage difficulties, and permitting the continuation of a return of approximately 75d. per lb. for all butterfat delivered to companies. Thereby the saving to the Dominion in the season 1941-42 was, on a conservative basis, approximately £300,000 to £350,000, and is likely to be about £300,000 in the 1942-43 season.

Utilization of Dry Butterfat.—Dry butterfat, though of excellent food value, is unattractive to the consumer, being devoid of characteristic butter flavour and of different appearance. It can be used as a substitute for butter in pastry, in cooking, and in making ice-cream. A slight metallic flavour remains when reconstituted into butter and cream, and investigations are in progress to overcome this and to devise various spreads based upon dry butterfat.

Incorporation of Whey Cream in Cheese Milk.—In the 1941-42 season investigations were initiated for the purpose of incorporating cream separated from cheese whey into the cheese made on the following day. This was prompted by the urge to increase cheese-production to a maximum. This practice was proved successful, provided the whey cream