

*Food Values and Vitamins.*

Advisory Committee: Dr. J. K. Inglis, Dr. C. M. Hector, Rev. Dr. J. E. Holloway, Mr. S. Bowman. Director of Research: Professor J. Malcolm.

Since research into food values and vitamins is fundamental to all animal nutrition work, investigations have been carried out at Otago University during the past year under the direction of Professor J. Malcolm. Miss A. Pope, who has been trained in animal-nutrition and dietetic investigational work overseas, was appointed research assistant to Professor Malcolm at the beginning of 1928.

The investigations involve—

(1) Work on meat-meals derived from freezing-works where various dry-rendering processes have been installed to supplement the wet-rendering processes so long established for the purpose of dealing with various by-products of the works. In themselves these meals apparently possess high nutritional values, and are likely to prove of considerable use in connection with pig and poultry feeding. The tests in progress at Otago University will form a basis for a number of feeding trials contemplated in various parts of the Dominion.

(2) A series of investigations into the vitamin content of New Zealand butters, in conjunction with the Lister Institute and the Dairy Division of the Department of Agriculture, also has been in progress for some time. These investigations involve monthly tests of selected representative New Zealand butters, and are of vital importance and concern to the New Zealand dairy industry. It is hoped that arrangements for their extension to other dairy-products will be possible.

*Wool.*

Advisory Committee: Mr. Q. Donald, Mr. A. H. Cockayne, Mr. J. Cook, and the Secretary.

As the result of a special contribution of £100 received from the New Zealand Romney Marsh Sheep Breeders' Association, investigations upon the nature and character of New Zealand wool fibres has been inaugurated. A large number of microscopical and weight examinations of selected portions of known fleeces has been undertaken in order to ascertain the precise nature of the changes alleged to be causing deterioration in New Zealand wool, and a report on the subject has been prepared. Simultaneously, investigations have been proceeding overseas, and opinions on the question of wool research have been exchanged with Australian and British authorities. There is a general conviction that the problem is exceedingly complex, and better suited for co-ordinated Imperial attack than for isolated investigation in any one Dominion. Already, in view of this fact, the Council recommends participation in any Imperial research scheme connected with wool, and in order to provide funds for the promotion of this work suggests that a levy be imposed upon local wool produced and exported.

*Cold Storage.*

During the year Dr. Franklin Kidd, of the Low-temperature Research Station, Cambridge, paid a visit to New Zealand for the purpose of conducting investigations into the cold-storage conditions throughout the Dominion. As a result of these investigations Dr. Kidd furnished a report of considerable value, which has resulted in increased interest in the question of cold storage, attention being directed generally towards efforts to eliminate the losses incurred through the present methods in vogue.

As a result of his visit much more complete co-operation has been effected during the present year with the Low-temperature Research Station, Cambridge. Very complete arrangements have been made through the Department of Agriculture to investigate the conditions and changes occurring in fruit from the time of its leaving the orchard until its delivery to the consumer in Great Britain.

By arrangements made with the shipping companies transporting fruit, recording thermographs will be placed in the holds of vessels, so that a more complete scientific history chart of the fruit may be secured. By this means more precise information regarding the changes occurring in fruit during the long period of transport will be secured, and means will be devised accordingly to reduce the wastage and loss incurred.

It is realized that the conditions existing in fruit before shipment often contribute as much to any loss suffered in transport as do the allegedly defective transport facilities. However, the storage and transport of a living organism such as fruit presents peculiar difficulties which are not met with in the case of meat or dairy-produce, and these difficulties demand investigation in the interests of growers, shipping companies, and consumers.

Special marked cases of fruit, which have been subjected to close scientific inspection in New Zealand, have also been forwarded to the Cambridge Low-temperature Research Station, together with full details and reports as to the condition of the fruit before shipment. In this work the co-ordinated efforts of the Horticultural and Biological Divisions of the Department of Agriculture have been of the greatest value.

The whole question of cold storage of fruit investigation is at the present time receiving the attention of a special committee.

*Phormium Research.*

Investigations, based on information collected from millers, and growers have been continued into problems of the phormium industry from the chemical and botanical standpoints.

The researches conducted by Mr. P. W. Aitken, M.Sc., have resulted in the perfection of a chemical process for bleaching fibre by the use of various chemicals. The process involves no weakening of the fibre-strength, eliminates paddocking, reduces labour-cost, and at the same time imparts a pleasing lustre to the fibre itself. Arrangements for the mechanical handling of the fibre on a large scale during the chemical bleaching process are now under investigation.