

PORK AND BACON RESEARCH.

The Department has secured detailed particulars of the preparation of pork and bacon as manufactured overseas. This information has been passed on to local bacon-manufacturers, who are members of the Bacon Research Association. In addition, samples of ham and bacon have been imported from overseas for purposes of comparison, and a number of tests in connection with salt-penetration, moisture content, &c., have been carried out on these samples. Problems such as fly and mould infections of bacon, suitable wrapping-materials, and various manufacturing difficulties have been under constant investigation, and reports in regard to these have been issued.

Work now has been commenced upon the influence of feeds upon bacon quality and structure, particular attention being devoted to the occurrence of deleterious taints and flavours which allegedly are due to feeding practices. One of the difficulties confronting investigators is the fact that very little research has been carried out upon the fundamentals of bacon-curing. Relief from this difficulty now may be secured as the result of the proposed establishment of a Bacon Research Institute, to be under the direction of Dr. Callow, of the Cambridge Low-temperature Research Station in Great Britain, and steps already have been taken to ensure co-operation with the work of this Institute.

WOOL RESEARCH.

Advisory Committee: Dr. C. J. Reakes (Chairman), Mr. W. Perry, Professor G. S. Peren, Mr. R. E. Alexander, Mr. E. Short, Dr. Dry, Mr. Q. Donald, Mr. A. H. Cockayne.

During the year the microscopical examination of a number of New Zealand wool-fibres, undertaken as a result of a special contribution of £100 received from the Romney Marsh Sheep-breeders' Association, was continued and brought to a state of partial completion. The results of numerous microscopical and weight determinations were embodied in Bulletin No. 7—"New Zealand Wool-fibres," by E. F. Northroft, M.Sc. This examination brought into prominence to a greater extent than ever before certain peculiarities of Romney-wool fibres, and will form the basis of further experimental work on the animals themselves.

The Council of Scientific and Industrial Research gave the matter of wool research careful consideration during the year, and decided that the problems confronting the wool industry were of sufficient importance to warrant the establishment of a Wool Research Committee. This committee, representative as it is of all wool interests, has very carefully surveyed the position as it exists in New Zealand, and in dealing with the main points to receive attention has had the advantage of consultation with Dr. J. E. Nichols, of the staff of the British Research Association for the Woollen and Worsted Industries, Torridon, Leeds.

As the result of this examination the complexity of the problems affecting the wool industry have become more apparent, and it has been decided to gradually build up a proper organization to cope with the situation. Pending this establishment, sectional investigations have been commenced at Massey Agricultural College, Dr. Dry undertaking investigations on the growth and development of the wool-fibre, and Mr. Scrivener examination of the wool-grease and its relation to fibre-nourishment. At the same time a limited number of breeding and management investigations will be conducted at both Canterbury (Lincoln) and Massey Agricultural Colleges.

In order that the best results may be secured, co-operation with investigations at present proceeding in Great Britain would appear very necessary, and proposals to raise the necessary funds to deal adequately with wool problems are now receiving consideration.

FUEL RESEARCH.

Fuel Research Committee: Colonel W. D. Holgate (Chairman), Professor H. G. Denham, Mr. W. A. Flavell, Mr. A. H. Kimbell, Mr. Robert Lee, Dr. J. S. Maclaurin, Mr. H. Vickerman, Dr. E. Marsden (Secretary).

Staff.—Mr. S. W. McIntosh, on completion of his investigation on coal-dust in mines, resigned in August, 1928.

The present staff comprises Mr. W. A. Joiner (Chemist in Charge), W. G. Hughson, and A. K. R. McDowell (Assistant Chemists). The work is carried out under the general supervision of the Director of the Dominion Laboratory, Dr. J. S. Maclaurin.

Laboratory.—The laboratory consists of three rooms, suitably equipped, at the rear of the Dominion Laboratory, Wellington. For the study of low-temperature carbonization of sub-bituminous coals a Fischer retort to take a charge of 30 lb. of coal was installed. As it was desired to examine the products in considerable detail, some modifications and adjustments were required: the oil-condensers were made gastight; a pump was installed to draw the vapours from the retort and through the condensers; provision was made for stripping the gas of light oil by means of absorbent charcoal; a gas-holder was constructed to collect and store the gas, and a meter to measure the quantity; a thermocouple was obtained to replace the mercury thermometer provided with the retort.

Work.—Waikato coal has been carbonized at temperatures of 550° and 600° C., and yields of residue, tar-oil, light oil, and gas determined. The tar-oil has been examined by fractional distillation.

Numerous coal-samples have been analysed and subjected to Gray King assay. Current literature on fuel has been indexed, and abstracts prepared when required.

The carbonization of South Island sub-bituminous coals in the Fischer retort is now proceeding, and small laboratory trials are being made preparatory to the carbonization of West Coast bituminous coals.