

interested in our problems and desirous of co-operating with us. In order to obtain full benefits from this co-operation and that it may be of fuller service in this direction, however, they impressed on me the desirability of a corresponding wool-research organization, from the growers' point of view, in New Zealand, and in this direction we are lacking. It is assuredly only too true that our crossbred wools are suffering from the competition of artificial fibres, and I was informed that some 100,000 bales of our crossbred wool were now being annually displaced by artificial silk; for instance, the head of a great mass-production clothing combine has largely replaced wool-worsted linings for coats and waistcoats by artificial silk. Some of the difficulties with wool which have led to this substitution have now been removed. Nevertheless, such cases illustrate the tendency. Consequently, it is necessary for us to be on the watch to improve our wool from the point of view of manufacturers' requirements, and to assist in the search for improved processing and new avenues of utilization of wool. This is a matter on which the primary producer should be even more interested than the manufacturer, and it was pleasing to note at Torridon that work had been undertaken on the perfection and commercial application of a new dry chlorination process of wool to eliminate shrinkage, to improve handling, and to eliminate skin irritation; also the new bleaching process now being widely used commercially to eliminate the yellowing of white flannel. There are also potential developments of channels for wider uses of established wool materials—*e.g.*, wool fabric for motor-car upholstery, wool-worsted cloth for coat-linings and for bathing-suits, all of which are made preferably from New-Zealand-type wools. I was assured that there is every reason to believe that wool has special characteristics not possessed by any competitive fibre, such as moisture absorption, insulating properties, elasticity, &c. It appears worth while to work up more exactly the reason for, and the extent of, these characteristics so that when the facts are established it would be possible to obtain the support of authoritative hygienists, physiologists, medical men, &c., whose opinions would undoubtedly affect public opinion in general favour of the use of wool. It will also be seen that the above efforts tend to increase the demand for our wool, and therefore the realizable price; and when it is realized that the United Kingdom alone is producing over 100,000,000 lb. of artificial silk, and the quantity is steadily increasing, it will be appreciated that some action on our part is worth while. The large works of British Celanese, Ltd., at Derby, employ some 15,000 workers.

MEAT.

During the year the Department has taken an active part in connection with the shipments of chilled beef from various freezing-works. This work consisted in the checking of the means of preventing bacterial and fungal infection of the beef on the killing-floor, and, prior to wrapping, the recording of the conditions of temperature and humidity during cooling and in transit to port; the checking-up of the instruments for indication of the carbon-dioxide content and temperature of the atmosphere in the holds during ocean transit. These data are used in relation to the interpretation of the condition of the beef on arrival in United Kingdom as regards bloom and quality as estimated by the officers of the Low Temperature Research Station in conjunction with the Meat Board. From the results of this work the best conditions of treatment are gradually being evolved, although much remains to be done in regard to the effects of various strains of bacteria and fungi which vary in growth-rate at any given temperature.

In general, the essential need before the Dominion is the maintenance of its reputation to produce high-quality meat, and every means of promoting quality must be exploited. The growth of the chilled-beef industry, which has developed largely from the research work of the Cambridge Low Temperature Research Station, which I visited, accompanied by the Chairman, Lord Rutherford of Nelson, makes it imperative that attention be devoted to the breeding of suitable types of beef animals in New Zealand, to highly efficient scientific control of factory, and to transport facilities, so that a ready demand will continue for our beef.