

*Publications :—*

- (1) "Low-temperature Carbonization of Blended New Zealand Coals," by W. G. Hughson. Bulletin No. 10. N.Z. Department of Scientific and Industrial Research.
- (2) "Low-temperature Carbonization of New Zealand Coals; 1—Waikato Coal," by W. A. Joiner. Bulletin No. 14. N.Z. Department of Scientific and Industrial Research.

*In the press :—*

- (3) "Low-temperature Carbonization of New Zealand Coals: 2—Kaitangata and Linton Coals," by W. A. Joiner. Bulletin No. 20. N.Z. Department of Scientific and Industrial Research.

## FRUIT RESEARCH.

A grant of £150 made to the New Zealand Institute of Horticulture for bud and stock selection work in connection with citrus fruits has been continued. Reports received from the Auckland branch of the New Zealand Institute of Horticulture have indicated that steady progress has been made with this work, but that it is too early to determine how far the stocks which have been imported from California and Australia are proving suitable for New Zealand conditions. The formation of a comprehensive scheme capable of providing for the Dominion's requirements in this direction, in view of the expanding fruit-export trade, has been the subject of a number of conferences with representatives of the industry, the Cawthron Institute, and the Department of Agriculture.

Arrangements have almost been finalized for the acquisition of a suitable experimental orchard property which will provide for field experiments and further investigatory work relating to the transport and storage of our main varieties of fruit. The Empire Marketing Board has in this instance made a generous offer of financial assistance towards the work proposed.

## LEATHER RESEARCH ASSOCIATION.

REPORT FOR THE PERIOD 1ST APRIL, 1929, TO 31ST MARCH, 1930.

Advisory Committee: Messrs. J. E. Astley, A. E. Lawry, D. Phillips, Dr. J. S. Maclaurin. Research Chemist, Mr. P. White.

During the year the Committee suffered the loss of one of its members owing to the death of Mr. A. M. Wright.

## REPORT BY THE RESEARCH CHEMIST.

The aim of the association is to produce in New Zealand, from local supplies of raw materials, leather which will compare favourably with that produced in any other country both as regards appearance and wearing-qualities. With this object in view the tanneries have been visited periodically, and the processes used thoroughly investigated and discussed with those in charge. Where possible, factory experiments have been instituted to determine the direction along which improvements could be made.

One of the chief problems encountered was the determination of what course should be followed to improve the general appearance of the leather. This was necessary from the selling point of view. Other things being equal, the best-looking article is most easily sold. It is pleasing to record that progress has been made in this direction, and experiments are being carried out to bring about further improvement.

The economic aspects of the various processes have been investigated, with the result that better yields of leather have been obtained. As a result of this, tanners have been able to reduce the price of leather to an extent over and above that due to the general fall in the price-level of hides. By obtaining better yields the tanner not only has increased the efficiency of his factory, but also has been able to give greater satisfaction to his customers.

Throughout the year tanning-materials have been subjected to regular analysis, and by this means tanners have been supplied with knowledge which has served to assist and guide them in the control of their various processes. This phase of the work is both capable and worthy of considerable extension.

Endeavours have been made to eliminate waste products, both by reducing their actual quantity through adoption of improved processes, and by their conversion into useful by-products of the industry. In this direction there is still much scope for investigation.

It has been apparent that too wide a gap and too little contact exists between the manufacturer and the user of leather. In order to bring the tanner into closer touch with the defects of his leather, as far as possible visits have been made to the boot-factories. In this way it has been possible to determine the actual requirements of the large users of leather. Much information has been obtained, with the result that leather which otherwise would have been purchased abroad has been secured from New Zealand tanners. This work is capable of being developed to a greater extent, with advantage to the tanner and the boot-manufacturer.

Contact has been maintained with those Government Departments which purchase leather. These Departments have rendered valuable assistance in the direction of providing facilities for the conduct of practical tests on the wearing-qualities of New Zealand sole-leather. These tests are still in progress both in the North and South Islands. So far it has been shown that, on the whole, New Zealand sole-leather compares well with the best imported leather.

Imperfect flaying of hides has affected the quality of the raw material of the leather industry. Consequently, information has been circulated to all those concerned, stressing the importance of due care being given to this process. The annual loss due to the poor "take off" of hides and pelts is large, and could be avoided by the adoption of better methods in abattoirs and freezing-works.

Work is being carried out in conjunction with the British Leather Research Association on the curing of hides. Some damage, known as "red heat," "pinking," or "salt-burn," occurs in New