

LEATHER AND SHOE RESEARCH.

Director: MR. P. WHITE. Assistant Director: MR. F. G. CAUGHLEY.

LEATHER RESEARCH ASSOCIATION.

Advisory Committee.—Messrs. A. E. Lawry (Chairman), C. Arlington, J. E. Astley, S. L. Wright, R. L. Andrew, and F. Johnson.

The main object of the Leather Research Association is to obtain information on the fundamental processes of leather-manufacture and by the application of this knowledge to help the tanners to maintain and further improve the quality of the leather produced. The importance of this knowledge is realized when processes which have been balanced over a number of years have to be modified to suit conditions which are enforced by the war. In spite of the intensified difficulties of manufacture during the past year, the quality of leather produced in New Zealand, both sole and upper, has been fully maintained.

The materials used in the manufacture of leather, apart from hides and lime, are mostly imported. It is essential, therefore, that waste of these materials should be reduced to a minimum in order not only to reduce shipping-space, but also to conserve the materials themselves. From time to time investigations have been carried out with this object in view.

Storage of Hides.—Certain changes have been found to take place in hides when stored. If the conditions of storage are reasonably good, it has been established that these changes are not detrimental from the point of view of leather-manufacture.

Crackiness and Stretch of Upper Leather.—During the year the lastometer has been used to investigate the crackiness and stretch of upper leather. The effect of the different processes, both wet and dry, on these qualities has been determined.

"Feel" of Upper Leather.—In many factories the "feel" of upper leather is dependent on the colour. This has been shown to be associated with the acidity of the dye or dye-bath in relation to the fat-liquoring process.

Thickness of Upper Leather.—The effect of processes on the thickness of the leather has been determined. Quality in leather is a summation of many properties; if one is accentuated, then it may be at the expense of one or more of the other properties. If the thickness of upper leather is increased by pressing, then fullness and feel are improved but the leather is made more stretchy and the area is decreased.

SHOE RESEARCH ASSOCIATION.

Advisory Committee.—Messrs. W. Denby, P. E. Edwards, U. S. Livingstone, D. MacDonald, and R. L. Andrew.

During the past year the footwear industry has been confronted with many difficulties. Many materials used have become unobtainable and substitutes have had to be used, and problems have been encountered in the change-over from civilian to military footwear. That so many of these manufacturing problems have been submitted to the Research Association for investigation and help is an indication of the confidence of the industry in the Association.

Information has been obtained and circulated on the following:—

Factory lighting in relation to output, comfort of workers, and economy with special reference to fluorescent lighting.

Factory ventilation in relation to those parts where toxic substances, chiefly solvents, are used.

Drying-chambers in connection with the drying of shoes in the process of manufacture.

Adhesives.—One of the great problems of the industry has been in connection with adhesives. The supply of solvents both for nitrocellulose and rubber adhesives has been short. The questions of conservation of supplies and the use of substitute solvents have involved a large amount of work during the year. In addition, the compounding of other adhesives with rubber latex to impart certain required characteristics to it and also to conserve supplies has been investigated.

Factory Visits.—In view of the greater number of problems submitted for investigation, the visits to the factories have been of especial interest. It would appear from the personal contacts made on these visits that the Research Association has fulfilled a very useful function during the year.

Monthly Circular Letters.—The interest of the industry in the activities of the Research Association has been fully maintained by the continuance of the monthly circular letters, in which are described the work being carried out and other topics of interest.

NEW ZEALAND WOOL MANUFACTURERS' RESEARCH ASSOCIATION.

Wool Manufacturers' Research Association Committee.—Mr. W. R. Carey (Chairman), Professor H. G. Denham, Mr. T. E. Donne, Mr. H. Lee, Dr. R. O. Page, Mr. T. C. Ross, Mr. W. L. Wood, Dr. E. Marsden (Secretary).

Director.—Professor F. G. Soper.

WOOLLEN BATCHING OIL MILL TRIALS.

In the woollen industry the type of oil used as a lubricant on the fibres plays an important part in the satisfactory processing of the wool. That the processes can be appreciably affected by the characteristics of the oil added to the wool is readily understood when it is realized that the addition of as much as 12 per cent. on the weight of wool of lubricant is sometimes deemed necessary. Two further mill trials have been carried out in which a number of oils, including neatsfoot and oleine and several blends, some of which contained high percentages of mineral oil, have been compared. It has been possible to include for comparison with the New Zealand lubricants two well-known imported oils. During the trials the carding, spinning, scouring, and piece dyeing are the processes on which attention is concentrated. Afterwards in the laboratory, on representative samples of yarn and fabric, numerous physical and chemical tests are carried out. Samples of yarn are also subjected to storage tests. The trials are showing certain oils, not necessarily the more expensive ones, to be far superior in all-round performance to others.

During a mill trial much information is collected concerning the different processes, and when this is presented in a comparative form with that from other trials it provides the members with information concerning the relative efficiency of their own processes.

Reports of the trials are circulated to all members.