

QUALITY OF SOLE-LEATHER.

During recent years many efforts have been made to correlate chemical analysis with the so-called quality of sole-leather. Quality in sole-leather as estimated at present is merely an expression of opinion, and no reasonably quick method exists of checking these opinions with actual performance in ordinary wear. Consequently the failure to correlate chemical analysis with varying opinions is not surprising. In addition, one important item of the official chemical analysis—*i.e.*, water-solubles—is based on an empirical test, which, owing to its nature, is unsatisfactory. The preliminary work on the true estimation of water-solubles has opened up a wide sphere of investigation which will, it is hoped, throw some light on the functions of the water-soluble content of sole-leather in its relation to the essential quality—*i.e.*, wearing-value.

GENERAL.

The usual routine work of the laboratory dealing with current works problems was efficiently carried out by the Assistant Research Chemist during the absence of the Director.

PELT RESEARCH.

The value of sustained and co-operative research on industrial problems is very well illustrated by the results achieved by the Pelt Research Association. Each year has been marked by definite progress, and the total result was expressed at a Joint Leather Conference held in Leeds in February, 1936: "The speaker, a practical sheep-skin tanner, pleaded for a closer co-operation between fell-monger and tanner, and gave as an example of what co-operation would do the successful issue of the work done by the New Zealand Government Pelt Committee. The occurrence of 'mottle' and 'leopard grain' would now be reduced, and these faults had been so bad at one time that several tanners had in the past refused to handle New Zealand pelts. Fortunately these troubles had been solved and the work brought to a very satisfactory conclusion." (Leather Trades Review, 18/3/36.) In addition, the following resolution was passed at a meeting of the New Zealand London Pelt Committee: "That the Committee is of the opinion that the research on New Zealand pelt problems carried out in New Zealand and the United Kingdom has resulted in a marked reduction in defects due to processing, and therefore urges that every effort should be made to enlist the energetic support of all freezing companies in New Zealand to enable the effective investigation of pelt problems to be carried out."

The effect of this increase in the quality of some New Zealand pelts has been to divert them, at higher prices, into special lines of leather for which hitherto they were considered unsuitable. The following quotation is made from a recent English trade circular: "The unusual relation between prices realized for Canterbury and North Island lambs is due to the fact that the former are not so suitable for the special gloving demand in this country as the latter. United States of America buyers have operated sparingly, and many of them regard present prices of North Island lambs as beyond their reach." A few years ago a flat rate more or less ruled throughout New Zealand, when all pelts, irrespective of quality, were made into the lower quality types of leather.

These results have been obtained by close co-operation, during the past five years, of certain freezing-works, tanners overseas, Research Associations in Great Britain and New Zealand, co-ordinated by the efforts of the Department's liaison officer in London.

DELIMING.

During the year the investigation on the best conditions of deliming has been continued, and the beneficial results obtained in the works have confirmed laboratory experience.

STORAGE OF PELTS.

The conditions affecting the effectiveness of the pickling while the pelts are stored in wooden casks has been investigated, and suggestions have been made to prevent the growth of mould which sometimes occurs on pelts in contact with the wood.

SEASONAL VARIATION IN PELTS.

Difficulties have been experienced in past years in connection with experimental trial shipments of pelts. These were possibly due to the inherent variation in the quality of the skins and to the consequent impossibility of obtaining comparable material for the tests. It was considered at the time that these inherent difficulties would be overcome by the large number of skins in the trial. This was not confirmed in practice, and the conclusion that seasonal variations in the quality had to be investigated was made. This work has been carried out over a period of some months both in the laboratory and in the works. The laboratory results obtained so far are very striking, and show how the quality of the skin is to a large extent determined by climatic conditions in their effect on glandular growth necessary to control body temperature. A shipment of skins is being arranged to demonstrate the effect of these changes on the leather produced from skins taken at monthly intervals during the season.

Grateful acknowledgment is made of the continuance of the grant instituted by the Empire Marketing Board and the grant from the New Zealand Meat-producers Board during the past year. Without these grants the results obtained would have been more restricted.