

In the long strain considerably more success has been encountered. Though incidence of losses has been high, sufficient records have been accumulated to indicate that successive generations are improving in respect of length. Fourth-generation sows from the original stocks are leaving progeny appreciably longer than their forbears. Though the numbers available in the last year are inadequate to permit of statistical analysis, the trends observable indicate some degree of progressive improvement in length.

Certain of these inbred animals were crossed with Large Whites and the resulting progeny closely bred. Little difficulty was experienced in fixing the desirable red colour from the Tamworth, but the inbred first crosses had to be back-crossed to the Large White to get greater length and better hams. Again numbers of carcass measurements available are small, but the main feature to date has been their variability. The longest carcasses are to be found among this group, and with careful selection based on progeny testing a stock breeding consistently for the desired length should be obtained.

With the degree of inbreeding which has been practised in the past, the sow population can now be classified into short and long strains with a considerable degree of certainty. This will permit of a more accurate interpretation of the progeny testing of boars and make the selection of future breeding-stock more certain. At the outset of the work, of necessity, sows were classified largely on appearance, but with the stocks now relatively pure for either shortness or length, present generations are more fixed in type and are better experimental material for studying modes of inheritance.

Due to the relatively small herd that can be maintained on the feed available and the necessary time lag in proving both sows and boars, progress must be slow. This becomes accentuated as the necessary selection from close breeding proceeds.

DOMINION LABORATORY

Director : MR. R. L. ANDREW

The Dominion Laboratory is primarily a service laboratory for Government Departments. Besides the analysis of a great number and variety of materials, this work has always involved a considerable amount of investigation of a fundamental nature, as well as work on specific problems.

The Director and other senior members of the staff have been consulted continually by Government Departments for advice on scientific and industrial matters. From the fund of knowledge possessed by the specialists of the staff it has often been possible to answer specific inquiries at very short notice. This service is always available to Government Departments and, in fact, to any person requiring scientific information, and is fully utilized. It is not, however, possible to undertake analytical work indiscriminately for industrial firms or private individuals, especially when that service can be obtained from consulting and analytical chemists in private practice. In recent years it has been the policy of the Department to assist local industries by the investigation of problems of manufacture which are of a generalized nature and which are beyond the resources of the industry concerned. For this purpose a staff has been assembled which consists of chemists, chemical engineers, and physicists. The Laboratory and its branches in Auckland, Christchurch, and Dunedin are prepared to undertake such industrial investigations as are possible with the present restricted staff and accommodation.

In respect of staff the Laboratory has been unfortunate in losing experienced chemists, and has found difficulty in obtaining replacements. The accommodation position, which was commented on in last year's report, has not yet been improved, and has actually deteriorated owing to the necessity of finding additional space for ceramic work.