

BIOMETRICS SECTION

Research.—The theoretical work on the design of identical-twin experiments has been completed and four papers are ready for publication. Studies have been made of the accuracy of various sampling methods to estimate the lactation yields of dairy cows, the day-to-day variation in a cow's performance, and the accuracy of double-reversal trials in dairy experiments.

Biometrical methods have been devised so as to enable the shapes of lactation curves to be treated statistically.

Advisory Duties.—Virtually all branches of the Department have sought biometrical advice from officers of the Section. The variety and volume of such requests has increased considerably over the past year. Outside institutions who have consulted the Section include Department of Agriculture, Agricultural and University Colleges, New Zealand Dairy Board, and National Library Service.

Punched-card Work.—Typical of the work done on the present punched-card machines are the analyses of six thousand sets of measurements on wheat plants for the Wheat Research Institute and of twelve thousand records from Wool Metrology.

Advantage was taken of discussing modern mechanical computing devices and their applicability to the work of the Section with Dr. L. J. Comrie, managing director of Scientific Computing Service Co., London, when he visited New Zealand recently.

Development of the Section.—Long-term plans for the development of the Section are being implemented as opportunity arises. The Section has now two officers studying at Cambridge University.

BOTANY DIVISION

Over 3,000 specimens were reported on and important additions and alterations were made to the herbarium.

A detailed study of the habitat forms of native blue-grass, blue tussock, silver tussock, and hard tussock have been undertaken to secure improved types of these native grasses for tussock-grassland renovation. The whole of Molesworth Station is periodically examined. Detailed work on the permanent plots yielded evidence on the progress of regeneration and a history of regrassing trials in tussock-grassland has been prepared for publication.

A new edition of the handbook of naturalized plants is in preparation and a bulletin on poisonous plants completed.

Field studies of (a) the significance of seaweed, (b) food plants of wild life, (c) floral development of the southern beech, and (d) vegetation surveys in the Wellington Province, Wither Hills, Mid Dome, and the Dunstan Mountain plots have been undertaken.

Studies on atmosphere-borne pollen were continued, these being related to the treatment of hay-fever, honey quality, and peat investigations. Some of the pollens collected during the previous season have been used for clinical testing of hay-fever patients. Pollen types of importance were described and demonstrated to a conference of beekeepers.

During the year the Division was made responsible for the co-ordination of all phormium (New Zealand flax) research undertaken by the Department. Work has been concentrated on yellow-leaf disease, which is making serious inroads into both the natural and the artificial stands on the Moutoa Estate. The cause remains unknown.

The present decline in the amount of agar weed collected was not found to indicate any over-picking of the beds. Promising new localities were discovered. The visit of the eminent Swedish algologist, Dr. Lore Levring, will greatly assist all seaweed work in this country.

A plant introduction service has been put into operation.