

2. *Field-work*.—This has been mainly in connection with ragwort, but on each field excursion opportunity has been taken to deal with general botanical problems. The ragwort areas visited have been in the neighbourhoods of Te Awamutu, Otorohanga, Tirau-a-moa, Ruakura, Putaruru, Mamaku, Arohena, Owaka, and Dunedin. Incidentally, much important material was obtained for the herbarium. The progress of *Spartina* plantations was examined at Thames and at Westfield. It is of interest to record that Mr. Parr has located at Westfield the first seedling *Spartina* known with certainty in New Zealand. In connection with the work on facial dermatitis in sheep and photo-sensitivity in general, further botanical studies were made at Lake Tekapo, especially in the experimental area, and at Lake Wanaka. Special attention was given to the distribution of the various species of *Hypericum* and *Polygonum*, both genera being suspected as causes of photo-sensitivity. Various matters investigated during the field work are being dealt with in papers under preparation. A visit was paid to the regrassing experiments on the Dunstan Mountains, under the guidance of officers of the Department of Agriculture, and a short report made to that Department.

3. *Research Work*.—This has been continued on the lines indicated in previous reports. Mr. Zotov has advanced his studies of the taxonomy and ecology of indigenous grasses and grasslands in a basis especially for an investigation of problems arising in the South Island tussock-grasslands. He has also completed his studies on the vegetation of the Tararua ranges, and with his co-workers has prepared a full report for publication. I have continued work on special genera of grasses and on the taxonomy and ecology of both indigenous and introduced plants in general, with special reference to a full survey of the weed position.

Much time has been given up to various aspects of the ragwort problem, and a considerable advance made in our knowledge of the life history of the plant and the effect of sprays. Since his appointment to the staff, Mr. Poole has been located at Hamilton and has devoted his time to the experimental and observational work planned by the Fields Superintendent of Auckland at the Farm of Instruction at Ruakura and on the experimental farm at Mamaku. He is also assisting in the general campaign instituted against ragwort. A very comprehensive programme of work is in hand, and reports will be made as data accumulate. It is premature to give any general conclusion in this report. This will be done in due course as reports from the officers in charge of various sections come to hand.

Attention has been paid to reputedly poisonous plants, and arrangements are being made to co-operate in feeding tests on certain of these. Work on poisonous plants has been made a definite feature of the general weed survey in progress.

4. *Publications*.—In addition to several shorter articles the following papers were published during the year:—

- (1) St. John's Wort and Allied Species. *N.Z. Journal of Agriculture*.
- (2) Indigene versus Alien in the New Zealand Plant World. *Ecology* (America).
- (3) An Introduction to the Grasses of New Zealand. Bulletin No. 49 of the Department of Scientific and Industrial Research.
- (4) Ecological Features of the Main Islands. In Handbook for the Auckland (1937) meeting of the Aust. & N.Z. Ass. Adv. Science.
- (5) Indigenous Grasslands of New Zealand. *Ibid*.
- (6) Life-form Statistics of the New Zealand Flora. *Journal of Ecology* (England).
- (7) An Artificial Cross between *Phormium colensoi* and *P. tenax*. *N.Z. Journal of Science and Technology*.

In course of publication are papers on the origin and distribution of the alien flora of New Zealand; the Cladoniae of New Zealand (both read at the Auckland (1937) meeting of the Australian and New Zealand Association for the Advancement of Science); and a survey of the work done on wild hybrids throughout the world (*Botanical Review*, America).

A paper by Mr. Zotov on the relations of the climate to timber-line was read at the Auckland meeting of the Australian and New Zealand Association for the Advancement of Science. This and his paper on leaf-anatomy in New Zealand grasses are being amplified for publication.

A number of papers are in preparation, including a Handbook of the Weeds of New Zealand.