

BOTANY SECTION.

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I. ROUTINE.

IDENTIFICATION OF SPECIMENS AND ADVICE THEREON.

As in previous years, this work has taken up a considerable portion of the time. Over 3,000 specimens have been reported on from the usual sources. A number of new records of naturalized plants have been made, but fortunately none have been of major importance as weeds. There has, however, been evidence that a number of serious weeds are steadily increasing their areas—e.g., *Psoralea pinnata*, *Eupatorium glandulosum*, and *Carthamus lanatus* (saffron thistle). Since Mr. Zotov's return to duty he has been able to render valuable assistance in this work. It is pleasing again to note the interest taken by Stock Inspectors and Instructors in Agriculture in the weeds of their districts.

HERBARIUM.

The policy of exchange with other institutions has been continued, and much valuable material accumulated. Additions have been made to all the sections, especially to that of introduced plants. Unfortunately space is so limited that the herbarium is badly congested, and working-conditions for my assistants are far from adequate.

LIBRARY.

The chief point to record is that the remaining volumes (some 150) of the library of the late Dr. L. Cockayne, so generously given to the Station, are now in our possession. There remain a considerable number of important pamphlets still to be received from the Dominion Museum. I suggest that permission be given me to arrange with the Director of the Museum that such pamphlets as are not actually required for the Station remain under his charge. It is extremely unfortunate that space is so limited that it is impossible to arrange the library so as to be conveniently available to workers. The time is long overdue when the Station should have a properly fitted-up room devoted to library use alone, under a capable assistant.

II. FIELD WORK.

During the year a number of excursions have been made as opportunity allowed, both by myself and Mr. Zotov. The work has been mainly devoted to study of indigenous grassland areas and ecological study on introduced plants. The most important piece of field work accomplished was a botanical survey of certain areas in the Mackenzie Country, where an outbreak of dermatitis had occurred in sheep. A full report was furnished to the Director, with a list of species found, and recommendation for further investigations on the trouble.

III. PUBLICATIONS.

The introductory book on the grasses of New Zealand has been completed and is shortly to go to the printer, while the more detailed studies in the taxonomy of indigenous grasses has been proceeded with. The work on certain genera has reached the stage when publication of the results is possible. Papers of systematic and ecological import have been published or accepted for publication by the Royal Society of New Zealand, the Australian and New Zealand Society for the Advancement of Science, and the National Society of Horticulture of France.

IV. TAXONOMICAL INVESTIGATIONS.

As indicated above, the systematic work on grasses and introduced plants has been carried on as in previous years. A good deal of work has also been accomplished on indigenous plants, and a number of other workers in this field have received assistance in their studies. Mr. Zotov has commenced a systematic study of *Pinus radiata* with a view to elucidating the status of the forms found in New Zealand, and has also commenced a study of pollen. In this work he has been assisted by Mr. Reed, who has also rendered valuable assistance in the routine work.

V. INTERNATIONAL LUCERNE TEST.

This was referred to in my last annual report, and a report is in preparation on the results of the first year's work. It is too early to draw any definite conclusions at present, but the work will be continued during the coming year. Mr. Woodhead has made detailed botanical observations on the strains under test.

VI. FRUIT RESEARCH.

As in previous years, Mr. Woodhead has devoted his main efforts to this work in a very capable manner. Assistance has also been given on the botanical side to the studies being made on "corky pit" and "mouldy core" in apples. Mr. Woodhead's report is attached.

STOCK AND SCION INVESTIGATIONS.

Mr. C. E. Woodhead supplies the following subreport:—

STOCK TRIALS.

Apple Stocks.—In order to ascertain the suitability of the East Malling apple stocks for New Zealand conditions, and to compare their performance with that of the Northern Spy stock, trials have been commenced at the Plant Research Station and in five of the chief fruitgrowing districts of the Dominion. Particulars of these are tabulated below:—

District.	Scion Variety.	Stock.	Number of Trees in Experiment.
Auckland	Delicious	Northern Spy, East Malling, Nos. I, XII, XIII, XV, XVI ..	20
Hastings	Cox's Orange ..	Northern Spy, East Malling, Nos. I, XII, XV, XVI ..	12
Hastings	Jonathan	East Malling, Nos. I, XII, XIII, XV, XVI ..	22
Plant Research Station	Cox's Orange ..	Northern Spy, East Malling, Nos. I, XV, XVI ..	32
Plant Research Station	Jonathan	Northern Spy, East Malling, Nos. I, XV, XVI ..	12
Plant Research Station	Sturmer	Northern Spy, East Malling, Nos. I, XV, XVI ..	32
Motueka	Sturmer	Northern Spy, East Malling, Nos. I, XII, XIII, XV, XVI ..	13
Dunedin	Delicious	Northern Spy, East Malling, Nos. I, XII, XIII, XV, XVI ..	20
Alexandra	Statesman	Northern Spy, East Malling, Nos. I, XIII, XV, XVI ..	28