From August to March inclusive the consignments received and utilized for the laboratory breeding and field work were as follows:—

Number of consignments received	15
Total number of cocoons received	65,713
Total number of adult parasites alive on arrival	21,233 (9,926 females, 11,307 males).

Owing to restriction of space, &c., it was not possible to utilize all this material in the laboratory, and approximately three thousand parasites were liberated in the field in Hawke's Bay in September in the hope that some of them might find hosts.

Breeding in field cages in Hawke's Bay was begun on 18th November, and after the beginning of December the greater part of the material received was sent there, only a small part being retained in the laboratory.

The results of the laboratory experiments are as follows:—

Total number of females utilized for breeding	5,104
Total number of parasite pupæ reared in the laboratory	14,672
Total number of adult parasites reared in the laboratory	6,412

The parasites thus reared in the laboratory and, in addition, supplies of parasites received from England after December were placed in field cages in Hawke's Bay, and the first parasite pupæ were collected from these cages on the 10th December.

From the parasite-breeding work conducted in field cages in the field, 14,634 pupæ were reared, and the total number of adult parasites reared was only 1,167.

The total percentage mortality of the parasite pupæ was 92. The majority of the pupæ was extraordinarily large, but is explained largely by the presence of an important native hyperparasite. The final analyses of the hyperparasite position are not available at present, but preliminary analyses indicate that 65 per cent. or more of the primary parasites have been destroyed by these secondaries. The hyperparasite causing the mortality has been identified at the Imperial Institute as a *Eupteromalus* sp.

In addition to the above work, liberations of 6,104 of the above parasites were made in the field in Hawke's Bay, and at the time of writing it is interesting to record that field recoveries of the introduced species have been secured. A considerable amount of time must now elapse before the results of the experiment will be known, but meanwhile field surveys will be carried out as often as circumstances will permit.

Biological Control of White Butterfly: It is again pleasing to report that the introduced parasite of the white butterfly is proving an outstanding success in holding this pest within reasonable limits. It is difficult to see the importance of this control measure in its true perspective, but the writer is of the opinion that were it not for the presence of the parasite the successful growing of some six hundred thousand acres of cruciferous crops in New Zealand to-day would be so uncertain as to render it impracticable. In the last annual report it was mentioned that under wet conditions a differential rate of parasitism was found to occur, depending on whether the butterfly chrysalids were found in wet or dry places. The influence of these wet conditions was such as to lead to the belief that in wet seasons such as those of the last two summers the butterfly would increase and again prove a menace to the crops. Fortunately this has not occurred, although in many places where field surveys have been carried out there are signs of the pest increasing; but, apparently, the parasite, although less efficient under wet conditions, is still able to keep its host from developing into a serious pest.

In the case of market gardening of cabbage, &c., a better degree of control of the pest is required than that which obtains for field crops, and consequently spray work on the control of the butterfly has been carried out; this will be dealt with later in the report under the heading "Insecticides for White Butterfly."

During the past year a considerable amount of field work was carried out which had both scientific and economic value. It was of scientific value in that the proportion of parasitized to unparasitized pupæ collected proved to be a definite measure of the importance of the parasite, and also proved of significance when compared with results obtained in previous years. It was of economic value in providing approximately twelve thousand parasitized and unparasitized chrysalids. The material thus collected was all transferred to cold storage, and during the winter months the unparasitized chrysalids were parasitized under heated glasshouse conditions and again transferred to cold storage, where all parasitized material was held. Subsequently, during the summer and autumn months the parasites were reared and distributed wherever required. In response to the numerous inquiries from all over New Zealand 100,000 parasites were sent out—4,000 to the Wellington Province, 16,000 to Auckland, 20,000 to Otago, and 60,000 to Canterbury.

Use of Oils against Red Mite: Experiments were again conducted in both field and laboratory on the effect of winter oils on the overwintering eggs of *Paratetranychus pilosus*, C and F., the common red mite on orchard trees in New Zealand. The purpose of this was to corroborate previous findings and also to investigate certain matters in regard to technique. The past seasons's work has demonstrated that previous findings are correct, viz.:—

That with a 5 per cent. oil concentration—

(1) Increasing the viscosity of the winter oil through a range from 95 sec. Redwood 1 at 100° F. to 399 sec. at 100° F. has no appreciable effect in increasing the kill of eggs secured. The average winter oil used in New Zealand to-day is in the vicinity of 85° to 120° Redwood at 100° F.

(2) Emulsification has no appreciable effect on egg-killing properties of the oil. In the current work three types of emulsifier were used to secure varying types of stability—viz., a miscible oil, an ammonium oleo-resinate emulsifier, and a lime-casein emulsifier, all in order of decreasing stability. No worthwhile difference in kill could be detected.