

seasons (1936–37 and 1937–38) the majority of the available parasites have been liberated in the South Island, particularly in Canterbury and Otago. The following table illustrates the wide area over which parasites have been distributed and established :—

						Season 1937–38.	Total in Three Past Seasons.
North Auckland	..	..	..	..	..	1,175	39,305
South Auckland	..	..	..	..	..	1,475	
Bay of Plenty	..	..	..	..	..	800	
Taranaki	..	..	..	..	..	2,750	4,945
Manawatu	..	..	..	..	..	6,655	9,990
Poverty Bay	..	..	..	..	..	..	1,200
Hawke's Bay	..	..	..	..	..	1,000	1,950
Wairarapa	..	..	..	..	..	500	500
Nelson	..	..	..	..	..	1,250	5,010
Marlborough	..	..	..	..	..	3,105	13,255
North Canterbury	..	..	..	..	..	3,875	120,550
Mid-Canterbury	..	..	..	..	..	10,605	
South Canterbury	..	..	..	..	..	17,075	
North Otago	..	..	..	..	..	1,550	14,588
Otago	..	..	..	..	..	650	
Otago Central	..	..	..	..	..	1,050	
Southland	..	..	..	..	..	..	2,000
Westland	..	..	..	..	..	700	2,160
						68,215	228,208

With the material available it is anticipated that 100,000 parasites will be distributed in the coming season. Arrangements have been made for the distribution of the parasites to be undertaken by officers of the Fields Division of the Department of Agriculture. No parasites will be sent out from Nelson in response to individual requests, as it has been found that a great amount of material is otherwise wasted and the best results not secured. The allocation of the available material to the different districts will be made after considerations of (a) the abundance of the white butterfly in the district; (b) the importance of cruciferous crops in the district; and (c) the number of parasites which have been previously liberated in the district.

Diamond-back Moth.—The work upon this insect has been devoted to researches upon its parasites : *Angitia* spp., *Diadromus*, and *Apanteles*. Of these parasites, most of the work has been concerned with the *Angitia*, shipments of the other parasites having been only comparatively recently received from England.

In regard to the imported *Angitia* (*A. fenestralis* and *A. cerophaga*), the breeding of these two species, which were imported during 1936–37, was continued throughout 1937–38, a total of 36,838 adults having been reared in the laboratory and 25,744 in field cages during the summer. Field liberations have been made as follows : The first liberation of 6,104 adults was made during 1936–37 in Hawke's Bay; in 1937–38 a total of 31,229 were liberated in the Nelson town area, in the vicinity of Richmond; at Waimea West; and in the Blenheim district.

A field survey to ascertain the results of these liberations has been carried out, 51,373 diamond-back-moth pupæ having been collected for this purpose from the various districts where liberations of the parasites had been made.

Though several adult parasites were found under field conditions in Hawke's Bay, the latest recovery being in April, 1937, no recoveries were secured from the 10,407 diamond-back-moth pupæ collected in the same area during the 1937–38 season. The same results were secured from a study of the area at Palmerston North, where liberations had been made earlier.

However, during 1937–38 the parasites had become established and were recovered from the Nelson and Blenheim areas.

Though the percentage of parasitism in the field was very low (2 per cent. to 5 per cent.) in the Blenheim, Waimea West, and Richmond areas, the position was much more satisfactory at the Cawthron Institute experimental area, where a high degree of parasitism was secured at the beginning of summer; this establishment was the result of escapes from the breeding-cages. In this experimental area approximately 55 per cent. parasitism was found in December, 1937, and this gradually increased to 70 per cent. by the end of January, 1938. However, at the end of March this figure had fallen to 5 per cent. A survey of the position during the forthcoming summer will reveal whether these parasites will be able to increase in a satisfactory manner without further liberations.

An important factor that apparently causes the decrease of parasitism by *Angitia* toward the close of the season in the field and will doubtless prove detrimental to this parasite is the influence of the hyperparasite *Eupteromalus* sp., which caused heavy mortality among the *Angitia* in Hawke's Bay during the previous season. Apparently when *Angitia* reaches a high percentage of from 50 to 70, the *Eupteromalus* proportionately increases, and the result is a rapid decrease of *Angitia* by the autumn. In the Northern Hemisphere the records show that this fall of *Angitia* does not take place, but that the parasite continues to increase to a maximum in the autumn.

Regarding the *Diadromus* parasite, eight consignments totalling 11,304 parasitized diamond-back-moth pupæ were received from England during the year; from this material the percentage of *Diadromus* secured was very low (1·2 per cent.). Most of the material available is being maintained under experimental conditions, while the remainder is held in cool store for the time being.