Three primary parasitoids in three genera were reared from Plutella xylostella (L.) larvae and pupae collected in various crucifer producing regions of Honduras. The ichneumonid Diadegma insulare (Cresson) was by far the most abundant species. Two Spilochalcis species, facultative hyperparasitoids attacking \textit{P. xylostella} and \textit{D. insulare}, were encountered as well as eleven species in nine genera of obligate hyperparasitoids attacking \textit{D. insulare}. Three vespid predators are noted as predating on larvae.

KEY-WORDS: \textit{Plutella xylostella}, crucifers, parasitoid, predator.

Cabbage is the principal vegetable produced for fresh consumption in Honduras and second, after tomato, in area planted. It is cultivated from 300 to 2,050 m above sea level and the majority of its producers are small-scale farmers (Secaira & Andrews, 1987).

The most important pest of cabbage is the cosmopolitan diamondback moth (DBM), \textit{Plutella xylostella} (L.) (Lepidoptera: Plutellidae). Larvae feed on the foliage and cause severe losses by killing young plants or reducing the commercial value of heads via cosmetic damage. Control of the pest in Honduras is currently based on frequent applications of high toxicity insecticides (Herrera, 1988) to which resistance is documented (Ovalle & Cave, in press). However, DBM has been controlled in other parts of the world through classical biological control programs (Cock, 1983; Lim, 1986).

\textcite{Thompson} (1946) listed 48 species of parasitoids of DBM worldwide. \textcite{Goodwin} (1979) listed 10 species in 4 families from Australia. \textcite{Ooi} (1979) found 5 species of natural enemies, including one pathogen and one predator, in Malaysia, although additional parasitoids have since been introduced (J. Waage, IIBC, Silwood Park, UK, pers. comm.). In Central America, no systematic inventory has been done of the natural enemies of DBM in cabbage or any other crucifer. The present study reports the results of such an inventory in Honduras to determine the pest’s primary and secondary parasitoids and predators.

\textbf{MATERIALS AND METHODS}

Weekly collections were made in commercial cabbage fields in the department of Francisco Morazán from June 1988 to April 1989. During this period and thereafter,
collections were made at irregular intervals throughout all crucifer producing regions of the country. Most fields sampled were treated with insecticides which growers typically use (Secaira & Andrews, 1987), although some neglected fields were free of chemical applications. Hosts were collected in fields at all stages of development according to the scale of Chalfant & Brett (1965). In each field, at least 20 plants were examined and all 3rd and 4th instar larvae, prepupae and pupae of DBM were removed and taken to the laboratory where they were reared until emergence of the adult moth or parasitoid. Observations of predators actually consuming hosts were made in the field. Voucher specimens are deposited in the Agroecological Inventory of the Escuela Agrícola Panamericana.

RESULTS

Three species of primary parasitoids were reared from DBM collected throughout Honduras. Two species of facultative hyperparasitoids attacking DBM or its parasitoids were also reared. Ten obligate hyperparasitoids were encountered; an 11th is recorded from rearings during a previous study. Only two predators were observed consuming larval DBM. An additional predator is noted from field work done before this study. All natural enemies reported herein are members of the order Hymenoptera.

PRIMARY PARASITOIDs

*Diadegma insulare* (Cresson) Ichneumonidae: Porizontinae (fig. 1) synonyms:
*Mesoleptus insularis* Cresson
*Horogenes insularis* (Cresson)
*Limmeria polynesianis* Cameron
*Campoplex (Angitia) hellulae* Viereck

![Fig. 1. *Diadegma insulare*, female.](image-url)