

## USC-VISCA Biological Expedition to Palawan, May-June 1982: I. Entomological Record

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### ABSTRACT

A group of seven scientists — five entomologists and two marine biologists — joined forces in exploring Palawan during May-June, 1982. Most of the entomological work of 119 man-days was done in Aborlan, Rio Tuba and in the southernmost island, Balabac. Attention was focused on Heteroptera, Coleoptera, Lepidoptera, Diptera and Hymenoptera, especially the social wasps.

The trip yielded roughly 1,000 different species with many interesting representatives, especially of the following families: Pyrrhocoridae, Cicindelidae, Nymphalidae, Pieridae, and, most of all, of Vespidae and Formicidae.

Balabac island proved a rich area. It contributed about 2/3 of all the species collected and many of them were not found in any of the other areas. The orchid garden-apiary at the Palawan National Agricultural College (PNAC) in Aborlan was unexpectedly rich, especially in spiders and aculeate Hymenoptera.

### INTRODUCTION

Biologically, Palawan is the outsider island of the Philippines. Together with associated smaller islands, most importantly the Calamian and Cuyo islands to the northeast and the Balabac-Bugsuk group to the southwest, it shows distinctly closer biotic affinities with Borneo than with the rest of the Philippine Islands (Dickerson et al. 1928, Carlquist 1965, Cuy 1981). The rest of the area within the Republic forms a coherent biogeographic area which may conveniently be called the *Philippines proper*. If we were to look at this division from the larger perspective of Southeast Asia as a whole though, we would make the opposite characterization: the Philippines proper are an outsider group, while the Palawan group is closer to the biogeographic center, a northern extension of Borneo. Henceforth we use the word *Palawan* to refer to Palawan Island together with associated smaller islands. This is nearly equivalent to the political unit of Palawan,

excluding only a few insignificant islands in the Sulu Sea. As such it is considered the fifth largest island group of the Philippines, with an area of 14,745 km<sup>2</sup>.

Migration of taxa between the Malay Archipelago and the Philippines has been overwhelming from the former to the latter, as expected. Taxonomic evidence shows that this has been principally from Borneo by way of Palawan (Dickerson et al. 1928). If Palawan is the outsider group of the Philippines, then this means that many taxa have moved northward into Palawan but failed to go further, while those which reached beyond Palawan have had a good chance of extending their ranges through much of the Philippines proper. One reason why this should be so is seen by reference to an ordinary atlas: Borneo and Palawan are on the Sunda Shelf, linked by an area of shallow water, while Palawan is separated from Mindoro, and Borneo from the Sulu group, by deeper water. Further, all major islands of the Philippines proper, with the exception of Mindoro, lie together on a similar shallow land shelf. At various times in the Pleistocene, then, with the lowering of the sea level, Palawan and Borneo formed part of a single land mass, while much of the Philippines proper was similarly united (Inger 1954). The outstanding topographic features of Palawan island are a central mountain range extending through much of its length, with an average height over 1,000 m and the absence of any large rivers and river valleys (Dickerson et al. 1928). The mountain range somewhat separates the two sides climatically, the dry season being more distinct on the western side. (For a concise textbook discussion of Philippine physico-biotic conditions of the past and present, see Chapter I of Alcalá 1976).

#### OBJECTIVES AND DESCRIPTION OF THE EXPEDITION

Palawan's biotic peculiarity was our main reason for our desire to make a collecting trip there for insects and arachnids. In addition, the area is little explored biologically, so that we could hope to find an uncommon number of species new to Philippine collections.

A cooperative Philippine-American zoological expedition visited Palawan island and stopped briefly at Balabac in 1947 (Hoogstraal 1951). The focus of the expedition was land vertebrates. Between 1959 and 1969, Prof. J.N. Jumalon led four collecting trips to Palawan, comprising about 212 man-days. Jumalon and company focused on butterflies. Dr. E. Schoenig spent two weeks collecting on Balabac in 1974 with special attention to mosquitoes. He returned in 1977 for a one-week stay close to

and some distance north of Puerto Princesa, with a group of Japanese entomologists. The entomologists of the present expedition, led by E. Schoenig (USC), were Dr. C.K. Starr (VISCA, specialist in social insects), Mr. T. Borromeo (USC and a private collector, concentrating on butterflies), Miss M.M. Tumilap (USC, specializing on Diptera), and Miss J.P. Cañete (VISCA, concentrating on Heteroptera and arachnids). The other members of the expedition were two marine biologists, whose report will be published later. Our main objective was to collect as widely as possible, making both specialized collections within the taxa mentioned above and general collections of insects and arachnids. In addition, Schoenig and Starr were to gather ecological data within their specialties and Cañete was to do the same for such Pyrrhocoridae (Heteroptera) as seemed warranted.

Most of our itinerary was laid out in advance, with provisions for flexibility in altering our plans. As it was, we could not always stick to our timetable but we were able to visit nearly all the areas originally planned. We spent a total of 119 man-days in Palawan, of which we were able to spend about 85 doing significant collecting in nine localities. The remainder were taken up in travel or in waiting for a change in the weather or other inclement circumstances. The approximate distribution of the 85 man-days among localities was as follows:

Puerto Princesa	2
Napsan, Puerto Princesa	4
Aborlan	35
Mariwara, Narra	1
Brooke's Point	1
Rio Tuba, Bataraza	17
Bugsuk	2
Balabac	20
Indalawan, Balabac	3

We were fortunate to be able to divide the bulk of our collecting activity, 72 man-days, between three widely separated localities. Some description of these is in order.

Our collecting at Aborlan, 69 km south of Puerto Princesa, was all within walking distance from our base at the Palawan National Agricultural College (PNAC). Besides providing a pleasant and effective base to work from, this gave access to a number of good agricultural and post-agricultural habitats. The area appeared quite arid, with rather sparse vegetation over