

**Species of *Euploea* (Lep.: Danainae)
on dry *Parsonia* Vines in Papua New Guinea**

by
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During a visit to Lae Botanical Gardens in the Morobe Province of lowland Papua New Guinea, I came across several clusters of *Euploea* on dried vines of *Parsonia lata* (Parsonsiaceae). The largest single cluster consisted of eight specimens of the three species *E. alcatheae* GODART, *E. batesii* FELDER and *E. sylvester* FABRICIUS. The butterflies had their probosces firmly embedded in the dry plant material and were deeply engrossed in the task at hand, which we know to be the ingestion of pyrrolizidine alkaloids (see ACKERY & VANE-WRIGHT, 1984). *Parsonsia* is one of the plants from which pyrrolizidine alkaloids have been isolated (EDGAR et al., 1980). Several species of *Euploea*, including *E. alcatheae* have been recorded from *Parsonsia* (ACKERY & VANE-WRIGHT, 1984: table 21), the two others apparently not.

During half an hour of observations, no specimen left the vines voluntarily. Several new specimens joined, landing in close proximity to an existing cluster without causing any commotion. The existing clusters appeared to act as visual cues for those that joined. The butterflies were definitely less wary than when found on flowers and at water. They could be collected by hand, and in one instance replaced on the vine without flying away.

EDGAR (1984) suggests that the Parsonsiaceae are the ancestral food plants of the Danainae and the Ithomiinae since they alone of plants studied contain both the cardenolides from which the species in question derive their toxic and emetic qualities, as well as the pyrrolizidine alkaloids needed for pheromone development, as well as possible augmentation of the toxic qualities. Cardenolide sequestration from the larval food plant, passed on through the pupal stage to the adult, is well established. Experiments have also shown that pyrrolizidine alkaloids can be sequestered by the larvae and passed on to the adult (ROTHSCHILD & EDGAR, 1982). The adult ingestion of pyrrolizidine alkaloids is almost certainly a secondary development connected with the food plant shift from Parsonsiaceae to Asclepiadaceae, other Apocynaceae and Moraceae. These plants are much more common and cover a wider geographical area. *E. batesii* is known to feed on *Parsonsia* as a larva though it may have alternative food plants. Thus *E. core* CRAMER larvae have been recorded from *Parsonsia* as well as most other genera of plants known as Danainae hosts. It is therefore likely that the modern Danainae all ingest pyrrolizidine alkaloids in the adult stage whether or not the larvae have sequestered them from the food plant.

The plant genus most frequently cited as a pyrrolizidine alkaloid source is *Heliotropium* (Boraginaceae) closely followed by *Crotalaria* (Leguminosae) and *Parsonsia*. Pyrrolizidine alkaloids have not been established in *Ageratum conyzoides* (Compositae). This pan-tropical weed will almost certainly prove to be the most important source in the dry tropics, especially for *Danaus chrysippus* LINNÉ whose distribution in the Old World almost perfectly matches that of the plant. My own observations in New Delhi clearly show it to be an alkaloid source.

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