

NOTES ON LIFE HISTORIES OF LEPIDOPTERA OF LAS ALTURAS, COSTA RICA

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ABSTRACT.— Food plant records for *Mechanitis menapis saturata* Godman & Salvin (Nymphalidae), *Hypothesis lycaste callispila* (Bates) (Nymphalidae), and *Oxytenis albilunulata* Schaus (Oxytenidae), from Las Alturas Biological Station, Puntarenas Province, Costa Rica, are given.

KEY WORDS: behavior, *Catasticta*, Central America, conservation, *Dismorphia*, dispersal, Euptychiini, hostplants, *Hypothesis*, immature stages, Ithomiinae, *Mechanitis*, Mesoamerica, Neotropical, Nymphalidae, Oxytenidae, *Oxytenis*, Papilionidae, Pieridae, Pronophilini, Satyrinae.

The Las Alturas Biological Station is located in southern Costa Rica, Central America, on a small patch of land leased to Stanford University, and is surrounded by a privately owned farm of enormous size. The nearest town to Las Alturas, Puntarenas Province, is located about 4km downhill from the station and is also located on the territory of the farm. The entire population of the town is employed by the owner of the farm, who owns all the houses in town as well. The station is located at an elevation of 1500m and is surrounded by montane rain forest, which integrates into cloud forest at higher elevations. The cloud forest goes to approximately 2500m and mostly consists of oak trees; it turns into grassy areas at elevations over 2500m. The montane rain forest around Las Alturas is much thicker than in the lowlands of the country (Fig. 5). The tops of the mountains, at about 2500m, are almost clear of trees, with occasional bamboo growth and moist areas with high grasses as well as wet bogs. The station is located on the edge of the virgin rain forest and has everything one can desire for conducting scientific field research, including a gas stove, gasoline-operating generator, microscope, books, and housing accommodations.

The peculiarity of the lepidopteran fauna of Las Alaturas area lies in the combination of typical mid-elevation forest fauna and immigrants from the lowland areas. This mid-elevation fauna is characterized by a great diversity of Ithomiinae, Pieridae of the *Dismorphia* and *Catasticta* genera, and Satyrinae of the Pronophilini tribe, which replace the lowland Euptychiini. However, many species which are indicated by DeVries (1987) as typically found below 1000m level in Costa Rica are actually found around the station (Ehrlich *et al.*, 1994). Judging from my personal observations combined with observations of other students, there are about 200 species of butterflies of the Papilionidae, Pieridae, and Nymphalidae families found around the station. A great diversity of moths coming to light was also observed around the station, as is typical for higher elevations in the tropics.

During my stay at the station in July 1992, I reared several species of Lepidoptera. Among them was the ithomiine *Mechanitis menapis saturata* Godman & Salvin (Fig. 1). The female of

this species lays eggs in clusters on the upper surface of the leaf. Larvae (Fig. 1a) feed gregariously until the last instar. However, they disperse before pupation. The food plant for this species in this area is *Solanum acerfolium* Dunal (Solanaceae).

The female of the ithomiine *Hypothesis lycaste callispila* (Bates) (Fig. 2) lays eggs solitarily on the underside of *Solanum brenesii* Monter and Stadles. The last instar larva (Fig. 2a) pupates on the underside of the leaf (Fig. 2b).

I found several larvae of *Oxytenis albilunulata* Schaus (Oxytenidae) on the upperside of the leaves of *Disforomita pittieri* (Engl.) D'Are (Guttiferae). Until the last instar, the larva resembles bird droppings (Fig. 3c). The last instar larva (Fig. 3a) mimics a snake. When disturbed, the thorax of the larvae contracts and rises almost perpendicularly to the leaf surface, exposing bright eyespots on the dorsal surface of the thorax (Fig. 3b). The larva pupates inside the folded leaf, making a loose silk cocoon. The adult (Fig. 3) hatches about two weeks later.

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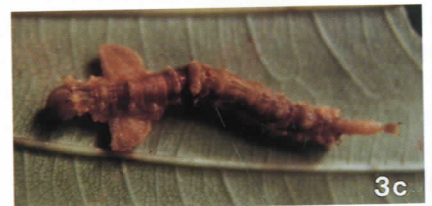
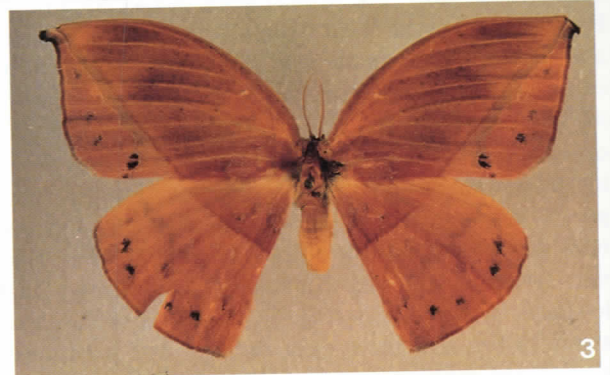
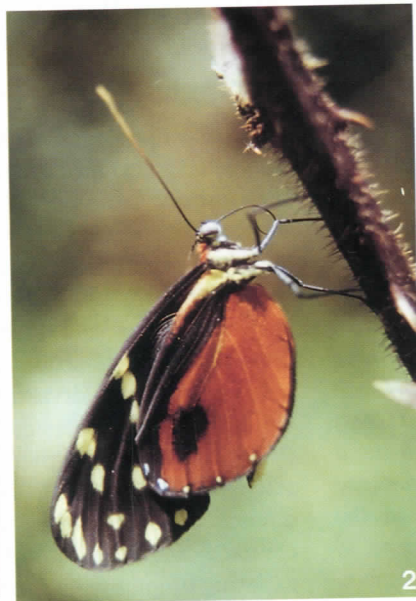


PLATE I. 1) *Mechanitis menapis saturata*; a) larvae feeding on *Solanum acerfolium* (Solanaceae) b) pupa. 2) *Hypothesis lycaste callispila*; a) larva feeding on *Solanum brenesii* (Solanaceae); b) pupa. 3) *Oxytenis albilunulata* (Oxytenidae), a) last instar larva found on *Disforomita pittieri* (Guttiferae); b) front end of last instar larva; c) fourth instar larva. 4-5) Rain forest in the vicinity of Las Alturas.