

TWO NEW SPECIES OF COSTA RICAN BUTTERFLIES (LEPIDOPTERA: RIODINIDAE)

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ABSTRACT.— Two new taxa, *Mesosemia harveyi* n. sp., and *Theope guillaumei cecropia* n. ssp., in the family Riodinidae, are described from Costa Rica and Panama. Remarks on their taxonomy, natural history and distribution are provided.

KEYWORDS: Amazon, behavior, Brazil, Cecropiaceae, Central America, French Guiana, hostplant, larval behavior, life history, Mesoamerica, *Mesosemia harveyi* n. sp., Mexico, Neotropical, Panama, taxonomy, *Theope guillaumei cecropia* n. ssp., Urticaceae.

It is well known that the Neotropics has more species of butterflies than other biogeographical regions (see comparisons in DeVries, 1987; Heppner, 1991; Robbins, 1982). The recent surge of interest in ecological comparisons of tropical entomofaunas (Beccaloni and Gaston, 1995; Gaston, 1991; May, 1988) has, among other things, provided much new material for taxonomic studies. Hence, as our understanding of Neotropical entomofaunas increases, more undescribed species are discovered.

Most general entomologists are aware that the butterfly family Riodinidae is largely a tropical group. Nevertheless, surprisingly few entomologists appreciate the fact that no other group of butterflies is so explicitly Neotropical — over 96% of the species are entirely Neotropical (see DeVries, 1991b; Heppner, 1991). Our systematic understanding of the riodinid butterflies stems primarily from two sources. The first is Stichel (1930; see also references therein) who was the first to provide a major taxonomic survey of the group, and his work by and large remains key to any alpha taxonomic work. The second source is Harvey (1987) who provides a modern higher level treatment that examines systematic and evolutionary aspects of the group, and thus forms the basis for future higher systematic work.

Although Costa Rica may lay claim to having one of the best known mainland Neotropical butterfly faunas, the fact is that comparatively little is known of the Costa Rican riodinid fauna — a trait shared with the rest of the Neotropics. Among other factors, the riodinids are probably less well known because of their small size, the fact that most species typically occur in low abundance, and their extremely local nature both in time and space (see DeVries *et al.*, 1994; DeVries, *in press* for overview). This is to say that, typically, riodinids do not get collected or studied by the casual entomologist. During the course of preparing a treatment of the Costa Rican riodinid fauna (DeVries, *in press*), it became apparent that some Costa Rican taxa were in need of description. While recognizing the significance of comprehensive systematic revisions to further our grasp of riodinid taxonomy, we also feel that faunistic works are important steps toward estimating biodiversity. This paper has three goals:

first to provide names for two taxa that will be treated in a forthcoming field guide to the Costa Rican riodinid fauna, second to make this relevant information available for future taxonomic and ecological studies, and finally to stimulate interest in the taxonomy and natural history of riodinid butterflies in general.

Methods

Morphological terminology of the genitalia follows Klots (1970), and terminology for the wing veins and areas follows the modified Comstock system as treated by Miller (1970). Genitalia were prepared for study by breaking off the abdomen, soaking it in 10% KOH for 12-15 hours, then placing it directly into water, and removing the scales with a small camel hair brush. The genitalia were then separated from the abdomen, further cleaned with the aid of a camel-hair brush and forceps, and then placed into glycerin. Line drawings were made from these preparations using a drawing tube attached to a dissecting microscope.

Acronyms for collections are as follows: American Museum of Natural History, New York, USA (AMNH), Museo Nacional de Costa Rica, San José, Costa Rica (MNCR), National Museum of Natural History, Washington, USA (USNM).

Genus *Mesosemia* Hübner, [1819]

The genus *Mesosemia* embraces well over 100 taxa that may be divided into about 10 species groups (Stichel, 1930). The butterflies in *Mesosemia* are important components of Neotropical butterfly species richness at most low to middle elevation sites, with the greatest concentration of species being found in the Amazon basin. Due to their habit of walking about on top of the leaves of understory shrubs with characteristic jerky movements (like clock-work toys), *Mesosemia* is one of the most frequently observed riodinid genera in the field.

In general, these butterflies are recognized by their somewhat square wing-shape, and the presence of an eyespot in the forewing cell that generally contains one to three pupils (in some cases the ocellus is obsolete, but the pupil remains). With a few