

[3614] A SYNOPSIS OF THE NEOTROPICAL NOGODINIDAE (HEMIPTERA: FULGOROMORPHA)

N.D. Penny¹ & L.B. O'Brien²,¹ Dept. of Entomology, California Academy of Sciences, Golden Gate Park, San Francisco, CA, 94118, USA. E-mail npenny@calacademy.org; ²3009 Brookmont Drive, Tallahassee, FL, 32312-2406, USA.

Fennah (1987) divided the family Nogodinidae into two subfamilies (Gastriniinae and Nogodininae): Gastriniinae is based on a single genus, *Gastrinia*, currently known from two species (three specimens) found in a relatively small area of southeastern Brazil. The higher classification of the other subfamily, Nogodininae, was proposed by Fennah (1978) to include five tribes, two of which (Bladinini and Nogodinini) are found in the Neotropical Region. The Bladinini are divided into three subtribes, two of which are found in the Neotropics: Gaetuliina and Bladinina. The subtribe Gaetuliina includes only a single genus, *Gaetulia*, in the region under consideration, with eight species ranging from northern Mexico to Panama. Bladinina previously included a single genus, *Bladina*, which was revised by Kramer (1976). *Bladina* are grass-feeding species which have forewings that are relatively long and narrow, often almost parallel-sided. There are currently 19 species and two subspecies in this genus ranging from southern Mexico to Paraguay and northern Argentina. Two additional genera are here recognized, each with a single species from Mato Grosso and Rondonia States in west-central Brazil. The only other tribe of Nogodininae found in the Neotropical Region is Nogodinini. In his paper on nogodinid higher classification, Fennah (1978) divided the Nogodinini into two subtribes, Nogodinina and Vutinina, both found exclusively in the Neotropical Region. These subtribes are separated by the length of the basal stalk of the media vein in the forewing. Vutinina contains a single genus, *Vutina*, which has rather broad, dark forewings. Seven species and one subspecies were previously known, but we recognize 14 species distributed from Panama to Bolivia, with a center of diversity in southern Peru. The subtribe Nogodinina consists of five closely related genera, *Biolleyana*, *Neovarcia*, *Nogodina*, *Orthothyreus*, and *Varciopsis*. *Biolleyana* was previously known from three species and we have recognized six additional species distributed from Nicaragua to Peru. *Neovarcia* previously has consisted of two species, *N. aequata* and *N. lurida*; we are herein transferring two additional species from *Varciopsis* – *N. tenguelana* and *N. vitripennis*. They are distributed in a relatively small area of Venezuela, Ecuador, and northwestern Brazil. *Nogodina* consists of a single species, *N. reticulata*, found in northern Brazil, Guyana, Surinam, and French Guiana. *Orthothyreus* is known from a single poorly known species, *O. apicalis*, from Ecuador. We are herein recognizing two species in *Varciopsis*, *V. nigricoxis* (transferred from *Orthothyreus*) and *V. trigutta*, found from Ecuador to Bolivia and Chile.

Index terms: true bugs, taxonomy, systematics

[3615] TROPIDUCHIDAE (FULGOROMORPHA, HEMIPTERA), GREEN GEMS OF THE FOREST

L. B. O'Brien, Center for Biocontrol, Florida A & M Univ., Tallahassee, FL 32307-4100, USA, E-mail biocontrol@netally.com.

The Tropiduchidae, found in all tropical and warm temperate regions of the world, feed on everything from ferns and palms to grasses and dicots. At least 16 species have been reported as pests on human food plants, on cacao, coffee, guava, and grapefruit in the Neotropics, and on sugarcane, rice, breadfruit, and palms in the Old World. One species, *Ommatissus lybicus*, the Dubas (Dubas =honeydew in Arabic) bug, is considered the most serious pest of date production in the Middle East and can cause the death of trees. There are 15 tribes, 124 genera, and about 300 species in the world compared to 5 tribes, 34 genera and 90 species in the Neotropics (The two U.S. species are also reported from Cuba.) Unlike any other fulgoromorpha family but Kinnaridae, half of the species known from the Neotropics are found in the West Indies. One, Tangiini, has 10 genera and 37 species there. Two other tribes have half their species there. I have seen at least 23 new species. The most distinctive tribes are those found only on the continent. Tambiniini, with 1 genus and 3 species in the New World, all on palm, are the size and shape of delphacids, with perhaps wings held more flat. Found in Mexico, Paraguay, and Brazil, this is the only N.W. tribe found also in the Old World. It is characterized in the Neotropics by three subapical cells. The second continental tribe is the Alcestini, found in Eastern S. America from Argentina through Brazil to Trinidad and Guyana. These species are flat, nearly round, have a short costal cell and costal area, and Sc+R forked in basal third. The Cyphoceratopini, the "humped horn faces", found half in the W.I., half from Central America to Ecuador, have a single row of transverse veins after the nodal line. They often have carinae marked with black or red. The Remosini, again half from the islands, but mostly the Greater Antilles, have vertex more or less elongate, tegmen with M forked twice before nodal line, 3rd valvulae of ovipositor with more than 5 teeth on ventral margin. The last tribe, Tangiini, have two subtribes, one primarily from the Lesser Antilles and one primarily from the Greater. These have the vertex not elongate, tegmen usually without M forked twice before nodal line, or, if so, nodal line concave, nearest to base at M.

Index terms: Systematics, Neotropics

[3616] THE NEOTROPICAL LOPHOPIDAE (HEMIPTERA) AND THE ENIGMA OF HESTICUS AND SILVANANA

A. Soulier-Perkins & T. Bourgoïn, Mus. nat. d'Hist. nat. Lab. d'Entomologie & ESA 8043 CNRS. 45 rue Buffon. 75005 Paris. FRANCE. E-mail: soulier@cimrs1.mnhn.fr, bourgoïn@cimrs1.mnhn.fr.

A cladistic analysis based on morphological characters (Soulier-Perkins, in press1) showed that the Lophopidae (Hemiptera, Fulgoromorpha), sensus Metcalf, is a paraphyletic group. Two South American genera, *Hesticus* and *Silvanana* cannot be regarded as Lophopidae. This family is now divided into four clades: Carriona +, Makota +, Sarebasa + and Bisma +. The clade Carriona + contains only one genus represented by three species. Within the phylogeny of the Lophopidae, the genus *Carriona* is the more basal clade and the sister group of all the others (33 studied genera). This genus is also the only Lophopidae presents on the American continent with a distribution located in Panama, Ecuador and Peru. The Lophopidae presents a transpacific tracing. Subsequently few hypothesis can be made for this paradoxical tract (Soulier-Perkins, in press2). One of the hypothesis is that during paleocene and after in between the upper miocene and pliocene, a way throughout the Behring'isthmus has existed. During the pleistocene' glaciation we can imagine that the taxa disappeared from the oriental margin of Asia and North America being pushed southwards into mid and south America throughout the Panama'isthmus. A fossil described by Cockerell and found in the Rocky Mountains supports this hypothesis. Withdrawing the genera *Hesticus* and *Silvanana* from the Lophopidae was a necessity but to which fulgoromorphan family do they belong? Shall we describe a new family for them? The position of these two genera could be elucidated throughout the study of the wing venation, the male and female genitalia and some peculiar morphological structures. We should check as well if any known synapomorphies for the fulgoromorphan families are present within these genera. Should their taxonomic position remain uncertain, a phylogenetical study at the family level will have to be undertaken.

Index terms: Fulgoromorpha, phylogeny, taxonomy, biogeography.

[3617] BIODIVERSITY AND BIOGEOGRAPHY OF NEOTROPICAL LEAF LITTER WEEVILS (CURCULIONIDAE)

R. S. Anderson, Canadian Museum of Nature, P.O. Box 3443, Station D, Ottawa, ON. K1P 6P4, Canada, E-mail: randerson@mus-nature.ca

Patterns in diversity, endemism and biogeographic relationships are summarized for leaf litter Curculionidae in various habitats in North, Central and South America. These patterns are discussed from ecological and historical perspectives and the implications of these results for conservation and management of Neotropical species diversity are also presented.

Index terms: conservation, endemism, diversity