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Nesobolus and a related new genus from Haiti (Diplopoda: Spirobolida: Rhinocricidae)

By Richard L. Hoffman

ABSTRACT

The Antillean rhinocricids thought to be referable to *Nesobolus* are listed; three Cuban species are added to the four treated by Perez-Asso in 1996, and two are deleted from the three listed for Hispaniola by Loomis (1936). The new monotypic genus *Dibothrocricus* is proposed to accomodate *Rhinocricus maltzani* Pocock, 1894, a common Haitian species previously placed in *Nesobolus*. The species identified by Loomis as *Nesobolus indus* (Palisot de Beauvois, 1817) is renamed *Nesobolus loomisi*, as the original combination *Iulus indus* is preoccupied by *Iulus indus* Linnaeus, 1758.

PRELUDE

During compilation of a checklist of the millipeds of North and Middle America, I encountered a variety of taxonomic and nomenclatorial problems which are better addressed in an advance publication than in the text of the list itself. The first installment of such modifications, treating names in the families Messicobolidae, Spirobolidae, and Atopetholidae, has already been published in this journal (5: 63-76, 1998). The present account is devoted to several species of the family Rhinocricidae described from Haiti.

Genus **Nesobolus** Chamberlin

Nesobolus Chamberlin, 1918, Bull. Mus. Comp. Zool., 62: 203. Type species: *N. toroanus* Chamberlin, by original designation. – Pérez-Asso, 1996, Insecta

Mundi, 10: 1 (revision of Cuban species).

Eight species, Cuba; one, Haiti.

Diagnosis: Posterior gonopod consisting of two slender, subsimilar distal elements, a smaller and shorter solenomere and a longer, acuminate tibiotarsal component, both about as long as their common stem below origin of solenomere.

This genus was set up for the single Cuban species *toroanus*, and was augmented shortly thereafter with the addition of two more Cuban species (Chamberlin, 1922). *Nesobolus* was recognized as present in the fauna of Haiti, when H. F. Loomis (1934) referred *Rhinocricus maltzani* (Pocock, 1894) to it without comment or redescription. Two years later, the Haitian component was again increased with Loomis' inclusion of the long - enigmatic names *Julus indus* Palisot de Beauvois and *Spirobolus domingensis* DeSausssure & Humbert - both known only from their original descriptions.

In 1938 Loomis described several additional Cuban rhinocricids in the then-comprehensive genus *Rhinocricus*, three of which (*etymophallus, clypeatus,* and *gonolepis)* seem to be referable to *Nesobolus* by structure of the posterior gonopods (although Loomis denied the similarity in the case of *etymophallus* at least). The genus received no further attention until a revision of the Cuban species was published by Pérez-Asso in 1996. This treatment considered the Chamberlin names *yaterus* and *libonanus* to be synonyms of *toroanus*, and described the new species *N. cuba, N. similis,* and *N. piedra.*

Upon recently examining some of the Haitian specimens identified by Loomis as *Nesobolus maltzani,* I was impressed with several features of gonopod structure that suggested generic distinction from *N. toroanus*, and here formalize the situation with a new generic name. One of the other Haitian species included by Loomis in *Nesobolus (domingensis* DeSaussure & Humbert, 1872) has been transferred to *Alcimobolus* as a senior synonym of *A. angustipes* Loomis, 1936 (Mauriès & Hoffman, 1998).

Nesobolus clypeatus (Loomis), new combination

Rhinocricus clypeatus Loomis, 1938, Bull. Mus. Comp. Zool., 82: 440, fig. 7. ♂ HT (MCZ) from Cueva del Aura on Pico Turquino, Prov. Oriente, Cuba.

Nesobolus cuba Pérez-Asso

Nesobolus cuba Pérez-Asso, 1996, Insecta Mundi, 10: 4, figs. 4A-C, 5, 6D. ♂ HT (Cuban Nat. Hist. Mus.) from Pico Cuba, Sierra Maestra, Prov. Santiago de Cuba, Cuba.

Nesobolus etymophallus (Loomis), new combination

Rhinocricus etymophallus Loomis, 1938, Bull. Mus. Comp. Zool., 82: 436, figs. 5a-c. ♂ HT (MCZ) from Rio Frio, Sierra Boniato, Prov. Oriente, Cuba.

In the original description of this species, Loomis stated that the sternum of the anterior gonopods is similar to that occurring in *Nesobolus*, but the form of the "anterior lobes and inner gonopods" of *etymophallus* is different. I fail to follow this assertion, as the anterior gonopods as drawn by Loomis are virtually identical with those of *N. toroanus* Chamberlin (illustrated by Pèrez-Asso, 1996), and the posterior gonopod, while not identical with any of the four taxa treated by that author, nonetheless strongly suggests congeneric relationship with them.

Nesobolus gonolepis (Loomis), new combination

Rhinocricus gonolepis Loomis, 1938, Bull. Mus. Comp. Zool., 82: 438, figs. 6a-c. ♂ HT (MCZ) from mountains north of Imias, Prov. Oriente, Cuba.

Nesobolus loomisi Hoffman, new name

Iulus indus Palisot de Beauvois, 1817, Insectes recueillis d'Afrique et d'Amerique, liv. 9, p. 154, pl. 6, fig. 2. Apparent misidentification of specimens from Santo Domingo as *Julus indus* Linnaeus, 1758.
Spirostreptus indus: Pocock, 1894, Journ. Linnean Soc. London, 24: 506.
Nesobolus indus: Loomis, 1936, Bull. Mus. Comp. Zool., 80: 59, figs. 24a,b.

Loomis was almost certainly correct in associating a long slender Haitian rhinocricid with the long-enigmatic name *indus* of Palisot de Beauvois (of which no type material is known to exist). O. F. Cook and Loomis found this animal at a number of localities in Haiti, and a neotype can eventually be selected from this wealth of material (mostly USNM).

In the original description, Palisot de Beauvois cited the name as *Iulus indus* Fabricius, presumably itself a reference to the original Linnean name based on a specimen from Asiatic India, and not the proposal of a new name.

Dibothrocricus, new genus

Name: A neologism combinidng the elements *di-* (two) + *bothros* (pit) + *krikos* (from *Rhinocricus),* in allusion to the modification of the anterior gonosternum. Masculine.

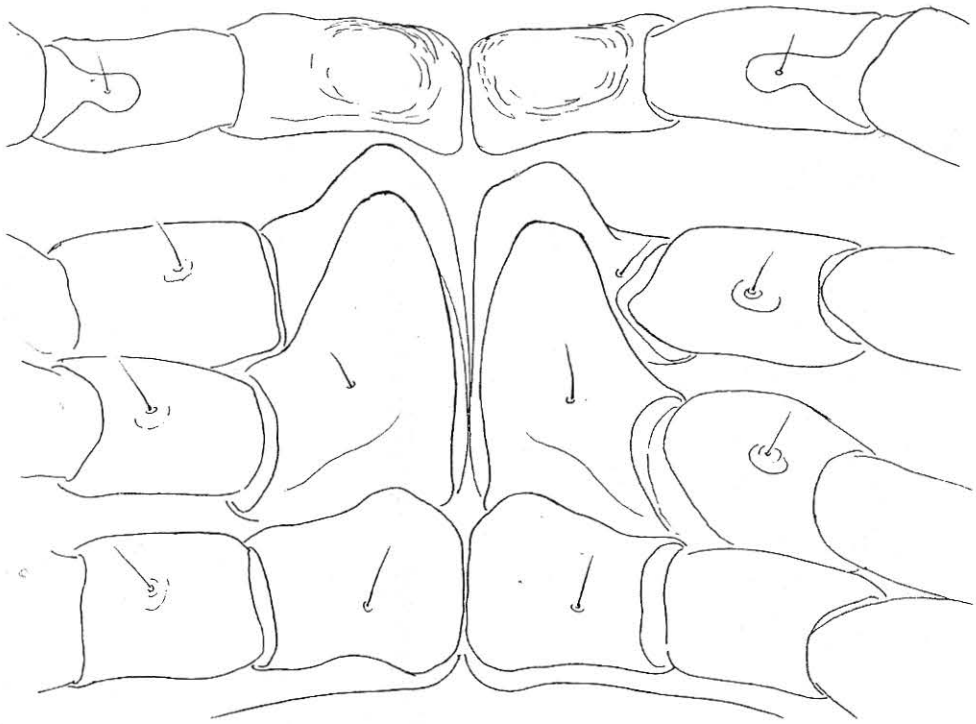


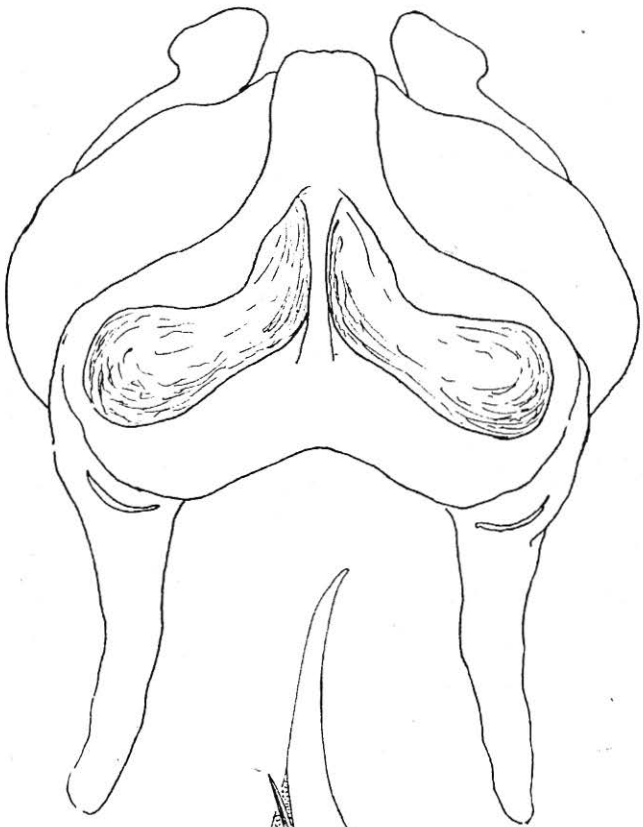
Fig. 1. *Dibothrocricus maltzani* (Pocock), basal podomeres of 3rd-6th leg pairs of male.

Type species: *Rhinocricus maltzani* Pocock, 1894.

Diagnosis: A rhinocricid genus characterized by the prominent, deep sternal cavities on anterior gonopods (Fig. 2) and partial enclosure of the solenomere by marginal lobes of the tibiotarsal element (Fig. 4). Antennae with four apical sensory cones. Segments smooth and polished, transverse sulci not evident, scobinae small, widely separated, extending back to 38th segment. Tarsal pads large, occupying entire ventral surface, present back to legs of 26th segment. Coxae of anterior male legs with conical ventral projections, largest on legs 5 and 6 (Fig. 1).

Relationships: On the basis of posterior gonopods, the nearest related genus appears to be *Nesobolus*. If so, the modification (partial sheathing) of the solenomere in *maltzani* is presumably a derived condition, but until all of the Antillean rhinocricids have been examined comparatively any further speculation on this point seems futile.

Figs. 2-4. *Dibothrocricus maltzani* (Pocock). 2, Anterior gonopods, anterior aspect. 3, Posterior gonopod, posteromesal aspect. 4, Telopodite, greatly enlarged, to show lobes shielding solenomere.



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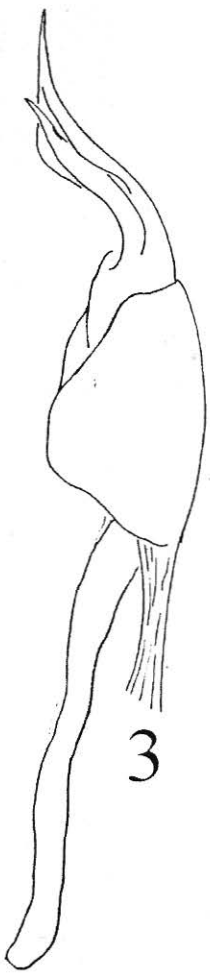

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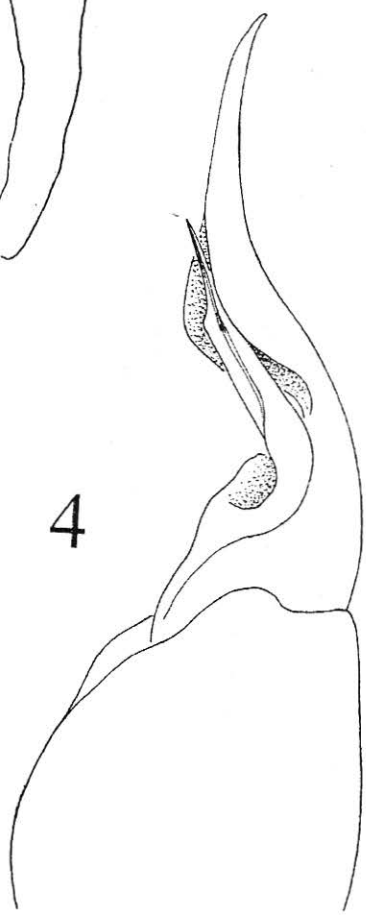

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Dibothrocricus maltzani (Pocock) (Figs. 1-4).

Rhinocricus Maltzani Pocock, 1894, Journ. Linnean Soc. London, 24: 495, pl. 38, figs. 5-5b. 0 HT (BMNH) from "Cape Haitien in St. Domingo."

Rhinocricus maltzani: Chamberlin, 1918, Bull. Mus. Comp. Zool., 62: 193 (Haitian localities).

Nesobolus maltzani: Loomis, 1936, Bull. Mus. Comp. Zool., 80: 61 (Haitian localities).

Eurhinocricus incursor Chamberlin, 1953, American Midl. Natur., 50: 139. ♀ HT (FMNH) from Cape Haitien, Haiti. **New synonymy!**

Material: Numerous males and females (VMNH, H. F. Loomis leg. et don.) from Plaisance, Ennery, and Cristophe's Citadel above Cape Haitien.

Synonymy: *E. incursor* is another example of Chamberlinian default taxonomy: representing species as undescribed by disregarding previously-known taxa. It is difficult to comprehend that the fundamental work by Pocock and Loomis was ignored in this case, especially since the types of *incursor* came from the same locality as those of the well-described *maltzani*. The statement that *incursor* could be "Separated from the other known Haitian species by the character of the scobinae and its black color" obviously cannot be justified, ssince these features were clearly portrayed in Pocock's description..

Notes: Pocock's original account of this species is quite precise as far as it goes, ex cept that I was able to trace scobinae somewhat farther back (to 38th rather than 22nd segment), and he did not mention the presence of tarsal pads (although they are indicated in his figure 5b), which begin on the 3rd pair of legs and extend back to about midbody.

The deep, largely desclerotized paramedian sternal cavities of the anterior gonopods presumably have a functional origin which can be investigated from observation of living animals.

ACKNOWLEDGMENT

I am much indebted to my colleague Jean-Paul Mauriès for copies of the relevant sections of Palisot de Beauvois' "Insectes recueilles..Afrique et Amerique".

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Address of the author:

Dr. Richard L. Hoffman
Virginia Museum of Natural History
Martinsville, Virginia 24112, USA