

PAPÉIS AVULSOS  
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A CONTRIBUTION TO THE KNOWLEDGE OF THE  
NEOTROPICAL RHINOTORIDAE (DIPTERA,  
ACALYPTRATAE)

J. H. GUIMARÃES  
NELSON PAPAVERO

INTRODUCTION

The genus *Rhinотора* was erected by Schiner (1868) with two species: *pluricellata* (type of genus) and *mutica*, the latter being transferred by Lopes (1934) to the genus *Neorhinотора*. Schiner situated *Rhinотора* in the vicinity of *Ropalomera* Wiedemann, and considered that both should form a separate family.

Williston (1895) followed Schiner and used in print for the first time the family-name Ropalomeridae. Later on (1896), in his "Manual of North American Diptera", he divided the family in two subfamilies: Rhopalomerinae and Rhinоторinae.

Hendel (1922) placed the Rhinоторidae among the families of his division "Drosophilomorphae", without any plausible reason.

MacAlpine (1957) gave definitely family status to the Rhinоторidae, being followed by Hennig (1958).

Hennig was not able to place the Rhinоторidae in anyone of his divisions of the Acalyptratae, and this family remains isolated, although showing some external similarities with the Ropalomeridae and to the Heleomyzidae.

The Rhinоторidae are quite different from the Ropalomeridae in many important aspects, but are also very similar to them in many characters and morphological trends, possibly by convergence, due to similarity of ecological niches, since both families live upon the sap exuded by tree trunks.

In short, the main differences which separate the Rhinоторidae from the Ropalomeridae are the following: postvertical bristles convergent or absent, vibrissae present, costal fracture present, subcosta free from R., almost ending in the costa, cubital vein (cu<sub>1b</sub>) convex, anal vein abbreviate, metaspiracular bristles absent, ovipositor short. Furthermore, as was pointed out by Hennig

(1958), the Rhinotoridae lack the "sclerotized bridge" (chitin-brücke) between the propleura and the prosternum, a character distinctive of the Sciomyzoidea, within which are placed the Ropalomeridae.

#### GEOGRAPHIC DISTRIBUTION

The Rhinotoridae are still poorly known, but they range from the Southwestern United States, Mexico and Costa Rica to Southern Brazil, east of the Andes, and to Peru, west of Andes.

Bigot's *Rhinotora leucopsis* (1891) from Abyssinia is not a Rhinotoridae, but a Chloropidae of the genus *Elaphaspis* Bezzi (Hendel, 1931: 17).

The family comprised, until recently, 8 Neotropical species. During our studies we have discovered 4 new species, three of *Rhinotora* and one of *Neorhinotora*, which will be described in the sequence.

It is interesting to note that some Heleomyzid species of the genera *Anastomyza* Malloch and *Apophoneura* Malloch present a remarkable resemblance to the Rhinotoridae in the presence of crossveins between C and  $R_{2+3}$  (see Malloch, 1932: pl. 2, figs. 8-11), especially *Apophoneura punctipennis* Malloch, which has a wing pattern closely alike that of the genera *Rhinotora* and *Rhinotoroides*.

#### KEY TO THE GENERA OF RHINOTORIDAE

1. Crossveins between C and  $R_{2+3}$  present ..... 2  
     Crossveins between C and  $R_{2+3}$  absent *Neorhinotora* Lopes
2. Postocellar bristles absent ..... *Rhinotora* Schiner  
     Postocellar bristles present ..... *Rhinotoroides* Lopes

#### MATERIALS AND METHODS

The Rhinotoridae can be collected by means of a Shannon trap baited with fermented fruits (bananas, pineapples, mangoes, etc.) situated in or near the woods. They can also be attracted by rubbing fruits on the bark of trees.

The nomenclature of the different parts of the genitalia here-with adopted is that employed by Crampton (1941) with the modifications proposed by Steyskal (1957).

All specimens studied in this paper are deposited in the collection of Diptera of the Departamento de Zoologia da Secretaria da Agricultura do Estado de São Paulo.

We have studied only the male specimens of the *Rhinotora pluricellata*-complex, since the females are almost impossible to be assigned to species due to the great variability of the morphological characteres.

#### *Neorhinotora* Lopes

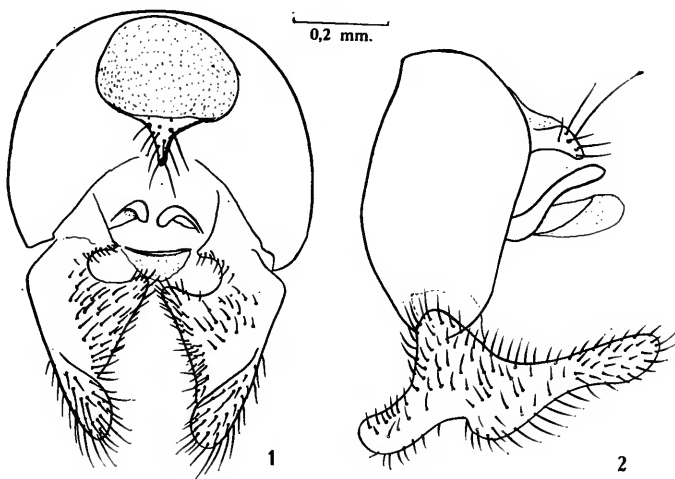
*Neorhinotora* Lopes, 1934: 517 (Type of genus: *Rhinotora mutica* Schiner, 1868, by original designation); Lopes, 1935: 25.

***Neorhinotora amapaensis*, sp. n.**

(Figs. 1-2)

♂: body length: 5 mm; wing length: 4 mm.

Agrees in every respect with *Neorhinotora aristalis* (Fischer) in the external morphology and coloration, and with *N. mutica* (Schiner) by the genitalia, but differs from both in the following aspects: epandrium semicircular, in lateral view; cerci reduced to a single little triangular sclerite; posterior surstyli well-developed (figs. 1-2).



*Neorhinotora amapaensis*, sp. n., fig. 1: male genitalia, dorsal view;  
fig. 2: same, lateral view.

♀ — the female agrees perfectly with the male, and is identical with *N. aristalis*, being almost impossible to separate from this species.

Holotype ♂ and Allotype ♀, n.º 28.757 and 28.758, from Serra do Navio, Território do Amapá, Brasil, X.1957 (Lenko).

***Neorhinotora aristalis* (Fischer)**

*Rhinotora aristalis* Fischer, 1932: 446, figs. 11-22.

*Neorhinotora aristalis*; Lopes, 1934: 517, 1935: 25, figs. 3, 13-16.

Type locality: Fazenda Murtinho, MT, Brasil (Type in the Instituto de Ecologia e Experimentação Agrícola, Seção de Entomologia, RJ). Further records: Corcovado, Rio de Janeiro, Guanabara.

We have examined 4 ♀ and 3 ♀ of this species, n.º 28.750-28.756, from the following localities: Andes, Bebedouro, SP, II.1955

(Carrera); Batatais, SP, X.1945 (Pereira); Fazenda Floresta, Três Lagoas, MT, IX.1964 (Exp. Dept. Zool.) and Fazenda Itaquerê, Nova Europa, SP, XII.1963 (Lenko).

***Neorhinотора mutica* (Schiner)**

(Fig. 11)

*Rhinотора mutica* Schiner, 1868: 234; Kertész, 1901: 416; Lindner, 1930: 126; Hendel, 1931: 16; Fischer, 1932: 446, figs. 5, 6, 21.

*Neorhinотора mutica*; Lopes, 1934: 517; Lopes, 1935: 25, figs. 2, 11-12, 17.

Type locality: "Brasilien" (Type in the Vienna Museum). Further records: Cantareira, São Paulo, SP; Corcovado, Rio de Janeiro, GB.

Material examined: 48 ♂ and 28 ♀, n.º 62.903-62.911, and n.º 28.759-28.835, from the following localities: São Paulo, SP, XI.1938 (Travassos F.º); Santo Amaro, SP, VII.1952, XI.1954, V.1955, IX.1956, X.1960 (Lane); same, II.1958 (Pinto); same, VI.1944 (Ramalho); Fazenda Santa Rosa, SP, IV.1924; Barueri, SP, VII.1955 (Lenko); Silveira, SP, I.1954 (Pereira); Curitiba, PR, XII.1937; Blumenau, SC, XII.1924 (Lüderwaldt); Morungava, RGS, I.1959.

***Rhinотора* Schiner**

*Rhinотора* Schiner, 1868: 233 (Type of genus: *Rhinотора pluricellata* Schiner, 1868, by original designation); Giglio-Tos, 1895: 43; Wulp, 1898: 380; Aldrich, 1905: 599; Lindner, 1930: 126; Fischer, 1932: 444; Curran, 1934: 300 (in key); Lopes, 1935: 19.

***Rhinотора diversipennis* Lopes**

*Rhinотора diversipennis* Lopes, 1936: 107, figs. 3-4, 7-9.

Type locality: Cantareira, SP, Brasil (Type in the Instituto de Ecologia e Experimentação Agrícola, Seção de Entomologia, RJ).

Material examined: 22 ♂, n.º 28.836-28.857, from the following localities: Santo Amaro, SP, VI.1944 (Ramalho); same, V.1951, VI.1952, XI.1954, V.1955, IX.1956, IV.1957, X.1960 (Lane); same, II.1958 (Pinto); Barueri, SP, VII.1955, X.1960 (Lenko); Cidade Azul, Sapucaí-Mirim, MG, 1400 m, XI.1953 (Travassos F.º, Kuhlmann, Gans & Medeiros); São Francisco de Paula, RGS, I.1959; Morungava, RGS, VIII.1958; Estação Biológica de Boracéia, Saleópolis, SP, XII.1949 (Travassos F.º & Rabello).

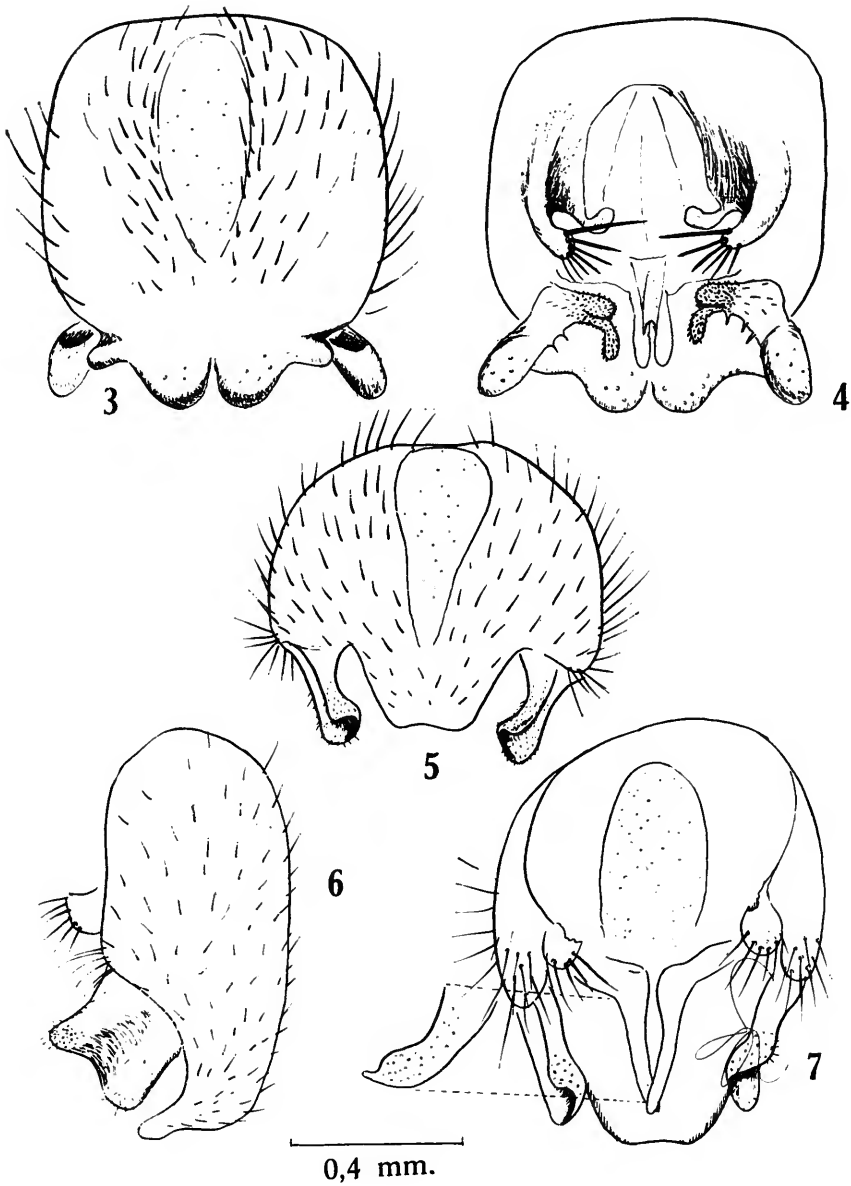
***Rhinотора lopesi*, sp. n.**

(Figs. 3-4)

♂ — body length: 7 mm; wing length: 5 mm.

This new species is the first of a number of closely related species belonging to what could be called the "*pluricellata*-complex" constituted by sibling species which differ only in the male genitalia.

*Rhinотора lopesi*, sp. n., differs from *pluricellata* Schiner in the following aspects: cerci entirely fused with the epandrium,



*Rhinotora lopesi*, sp. n., fig. 3: male genitalia, dorsal view; fig. 4: same, ventral view. *Rhinotora salesopolitana*, sp. n., fig. 5: male genitalia, dorsal view; fig. 6: same, lateral view; fig. 7: same, ventral view.

showing a bifurcated apex; in ventral view it can be observed a digitiform process, with apical bristles (probably this sclerite can be referable to the anterior surstyli, occurring in some Acalyptratae, such as Sciomyzidae, Dryomyzidae and Heleomyzidae, accordingly to Steyskal, 1957: 68); in dorsal view, in this piece there are the posterior surstyli, which show, in their inner aspect, a group of abbreviate and short bristles (figs. 3-4).

The name of the species is in honour of Dr. Hugo de Souza Lopes, of the Instituto Oswaldo Cruz, Rio de Janeiro, who made the first appreciable contribution to the knowledge of this family in the Neotropical region.

Holotype ♂, n.º 28.858, from Fazenda da Guarda, Alto da Boa Vista, Campos do Jordão, SP, III.1963 (Papavero, Guimarães & Travassos F.º) and 35 paratypes ♂, n.º 28.859-28.893, from the following localities: Barueri, SP, I.1955, VII.1955, XII.1955, X.1960 (Lenko); Santo Amaro, SP, VI.1952, IX.1954, V.1955, IX.1956, IV.1957 (Lane); Estação Biológica de Boracéia, Salesópolis, SP, I.1952 (Travassos F.º, Carrera, Vanzolini, Oiticica & Pearson); São Francisco de Paula, RGS, I.1959; Morungava, RGS, XII.1958.

#### **Rhinotora pluricellata** Schiner

*Rhinotora pluricellata* Schiner, 1868: 233; Lindner, 1930: 126; Fischer, 1932: 425; figs. 8-9, 20; Lopes, 1935: 20, figs. 1, 4-7.

Type locality: "Brasilien" (Type in the Vienna Museum). Further records: Corcovado, Rio de Janeiro, Guanabara.

Material examined: 3 ♂, n.º 62.916, 28.897 and 28.898, from Andes, Bebedouro, SP, II.1955 (Carrera) and Corcovado, Rio de Janeiro, GB, IV.1934 (Travassos & Lopes).

#### **Rhinotora salesopolitana**, sp. n.

(Figs. 5-7)

♂ — body length: 9 mm; wing length: 6 mm.

Belongs to the *pluricellata*-complex and differs in the following aspects of the genitalia: cerci intimately fused with the epandrium (tergites IX and X), with a subtrapezoidal apex, in dorsal view; posterior surstyli situated laterally to the cerci; posterior surstyli slightly concave along their greatest length; anteriorly to the posterior surstyli can be observed a sclerotized sheet, related to tergite IX, very well differentiated, and which possibly is a vestige of tergite X; postgonites pointed at apex (figs. 5-7).

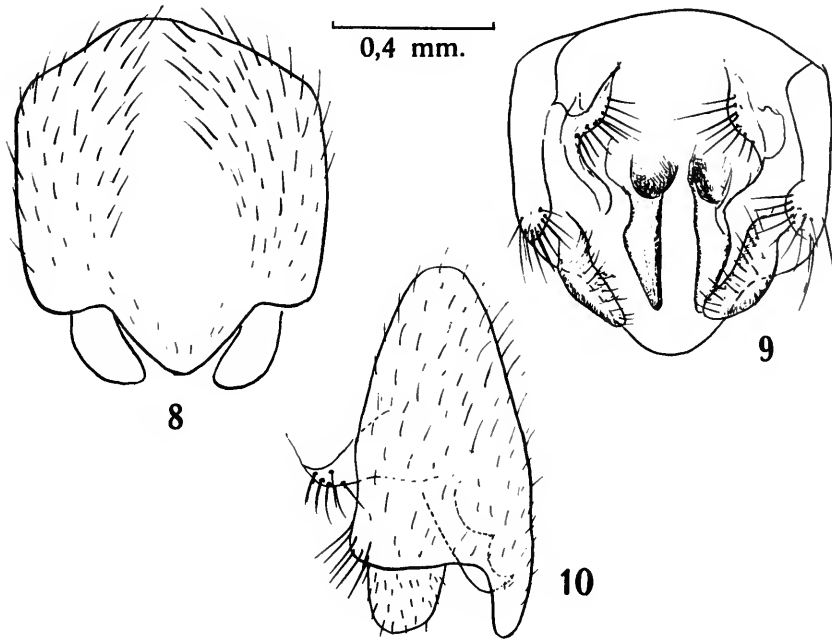
Holotype ♂, n.º 28.899 and paratype ♂, n.º 28.900, from Estação Biológica de Boracéia, Salesópolis, SP, XII.1949 (Travassos F.º & Rabello).

#### **Rhinotora spilopectera**, sp. n.

(Figs. 8-10)

♂ — body length: 8 mm; wing length: 5 mm.

Also related to the *pluricellata*-complex, differing in the following features: cerci entirely fused, showing a triangular outline in ventral view; laterally to this piece can be found the pair of



*Rhinotora spilopectera*, sp. n., fig. 8: male genitalia, dorsal view; fig. 9: same, ventral view; fig. 10: same, lateral view.

posterior surstyli, directed inwards; postgonites, as seen in lateral view, pointed at apex, with a tooth-like subterminal process (figs. 8-10).

Holotype ♂, n.º 28.901, from Estação Biológica de Boracéia, Salesópolis, SP, XII.1949 (Travassos F.º & Rabello).

#### ***Rhinotora travassosi* Lopes**

(Fig. 12)

*Rhinotora travassosi* Lopes, 1934: 517; Lopes, 1935: 20, pl. 1, fig. 1; Lopes, 1936: 106, figs. 1-2, 5-6.

Type locality: Cantareira, São Paulo, SP, Brasil (Type in the Instituto de Ecologia e Experimentação Agrícola, Secção de Entomologia, RJ).

Material examined: 1 ♂ and 2 ♀, n.º 28.894-28.986, from the following localities: Barueri, SP, VII.1955 (Lenko); Estação Biológica de Boracéia, Salesópolis, SP, XII.1949 (Travassos F.º & Rabello); Cidade Azul, Sapucaí-Mirim, MG, 1400 m, XI.1953 (Travassos F.º, Kuhlmann, Gans & Medeiros).

**Rhinotoroides** Lopes

*Rhinotoroides* Lopes, 1934: 517 (Type of genus: *Rhinotoroides bifurcata* Lopes, 1934, by original designation); Lopes, 1935: 24.

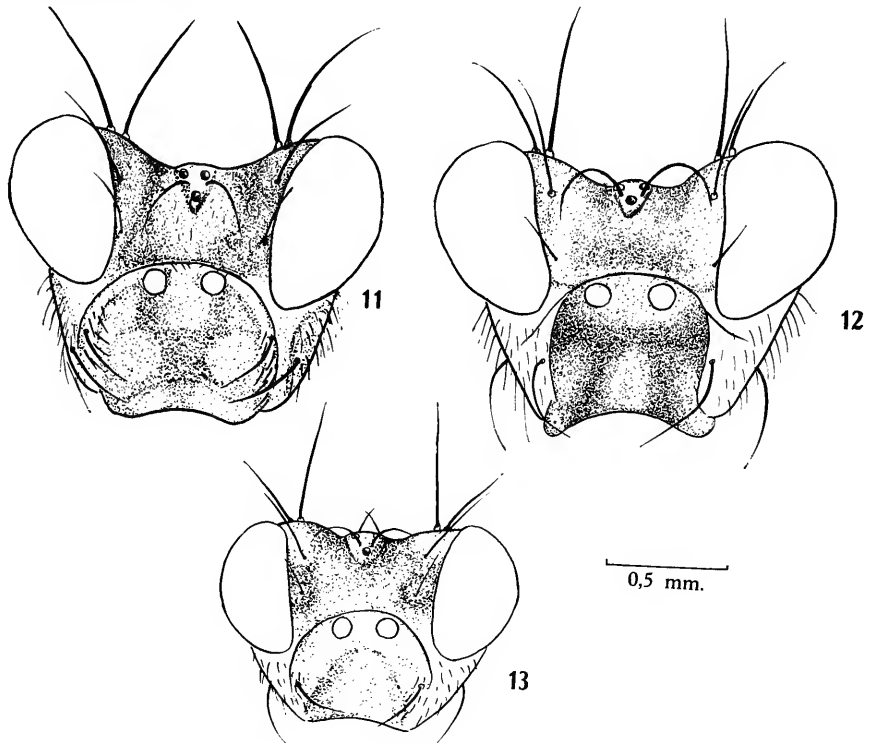
**Rhinotoroides bifurcata** Lopes

(Fig. 13)

*Rhinotoroides bifurcata* Lopes, 1934: 517; Lopes, 1935: 24, figs. 9-10, pl. 1, fig. 3.

Type locality: Cantareira, São Paulo, SP, Brasil (Type in the Instituto de Ecologia e Experimentação Agrícola, Secção de Entomologia, RJ).

Material examined: 5 ♂ and 4 ♀, n.º 62.914, 28.902-28.909, from the following localities: Santo Amaro, SP, V-VI.1944 (Ramalho); Estação Biológica de Boracéia, Salesópolis, SP, I.1952 (Travassos F.º, Carrera, Vanzolini, Oiticica & Pearson); Curitiba, PR, XII.1937.



*Neorhinotora mutica* (Schiner), fig. 11: head, anterior view; *Rhinotora travassosi* Lopes, fig. 12: same; *Rhinotoroides bifurcata* Lopes, fig. 13, same.



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