

***Mayatyphlus carltoni* Gusarov, a new genus and species of
leptotyphline staphylinid beetle from Belize
(Coleoptera: Staphylinidae: Leptotyphlinae)**

VLADIMIR I. GUSAROV

*Division of Entomology, Natural History Museum, University of Kansas, Lawrence, KS 66045-7523, U.S.A.
and*

*Department of Entomology, St. Petersburg State University, Universitetskaya nab., 7/9, St. Petersburg 199034,
Russia.
vlad@ku.edu*

Abstract

Mayatyphlus carltoni Gusarov, gen. n. and sp. n. of the tribe Neotyphlini is described from Belize. Diagnostic characters and illustrations are provided to distinguish *Mayatyphlus* from closely related genera.

Key words: Coleoptera, Staphylinidae, Leptotyphlinae, Neotyphlini, *Mayatyphlus*, Neotropical, taxonomy, nomenclature, new genus, new species

Introduction

The staphylinid subfamily Leptotyphlinae includes exclusively blind and wingless soil-dwelling beetles represented by 43 genera and 517 species in all zoogeographical regions (Herman 2001; Gusarov 2001; Gusarov, in press). The subfamily is most diverse in temperate regions with Mediterranean type of climate where 98% of all known species occur. In Nearctic and Neotropical regions most species of leptotyphlines are described from California (12 species; Coiffait 1959, 1962; Sáiz 1975a; Gusarov 2001) and Chile (25 species; Coiffait 1963; Coiffait & Sáiz 1965; Sáiz 1974, 1975b). However, the fact that leptotyphlines were found in Venezuela (1 species; Decu 1990), Guatemala (1 species; Gusarov, in press), Mexico (9 species; Navarrete-Heredia *et al.* 2002), Cuba (2 species; Coiffait & Decou 1972; Decou 1973), Florida (1 species; Frank & Thomas 1984), Idaho (unspecified number of undescribed species; Newton *et al.* 2000) and Alaska (1 species; Smetana 1986)

suggests that the higher diversity in the regions with Mediterranean climates may reflect more extensive sampling.

In this paper I describe a new genus and species of leptotyphline staphylinid beetle from Belize.

To avoid the controversy on what side of the aedeagus should be called ventral (Gusarov 2002), I refer to the side of aedeagus bearing the basal orifice as parameral.

Depositories

KSEM – Snow Entomological Collection, University of Kansas, Lawrence (Dr. J.S.Ashe)

LSAM – Louisiana State Arthropod Museum, Baton Rouge (Dr. C.E. Carlton)

Mayatyphlus Gusarov, gen. n. (Figs. 1-18)

Diagnosis. Based on the presence of procoxal fissure, dilated second and third articles of maxillar palpus and the absence of deep transverse basal furrows of abdominal sterna, *Mayatyphlus* is assigned to the tribe Neotyphlini Coiffait, 1963. *Mayatyphlus* can be distinguished from the other genera of that tribe by the combination of the following characters: labrum with straight anterior margin and single medial tubercle; mandibles with single subapical tooth; prostheca present; last segment of maxillar palpus short; gular sutures almost contiguous anteriorly; frontal swelling above antennal insertions interrupted in the middle; short prosternal process; and short and narrow parameres.

Mayatyphlus differs from *Cubanotyphlus* Coiffait & Decou, 1972, a genus known from Cuba, Florida and Guatemala, in having labrum with straight anterior margin; antennal article 3 without setae; and short and narrow parameres.

Description. Length 0.7-0.8 mm. Body brownish yellow, poorly pigmented.

Head with slightly convex sides (Figs. 1-2). Labrum (Fig. 7) with straight anterior margin (in exactly dorsal view), with small medial tubercle (visible in oblique dorsal view: Fig. 1). Mandibles (Figs. 5-6) with single subapical tooth and developed prostheca. Maxillar palpus with dilated articles 2 and 3, article 3 with broad base, last article short and narrow (Fig. 8). Antenna with articles 3-10 transverse, article 3 without setae, articles 4-8 with normal setae arranged in one belt, articles 9-11 with normal setae arranged in two belts and with clavate setae in subapical portions (Fig. 9). Gular sutures almost contiguous anteriorly (Fig. 2). Frontal swelling above antennal insertions interrupted in the middle (Fig. 1).

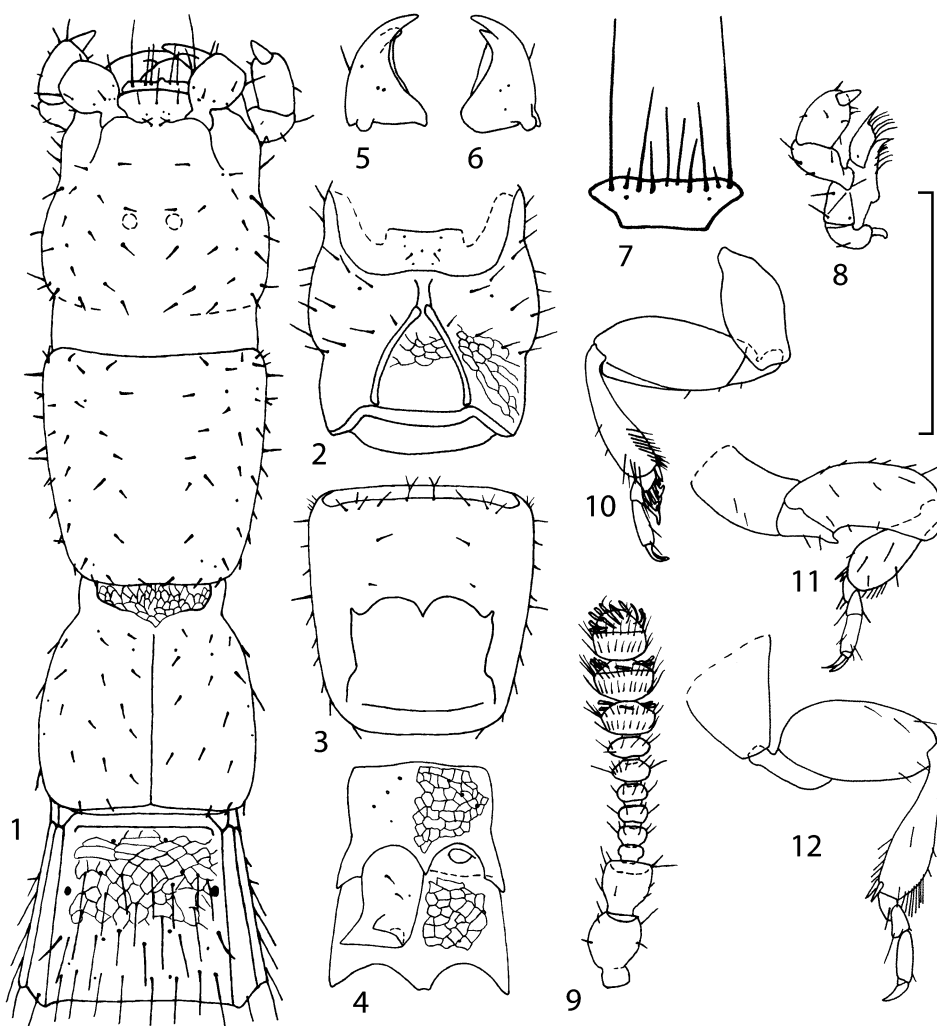
Procoxal fissure present as anterolateral notch in procoxal cavity (Fig. 3). Prosternal process short (Fig. 3). Meso- and metathorax as in Fig. 4. Tarsi with three articles (Figs. 10-12).

Abdominal sterna without transverse basal furrows.

Male protarsus with adhesive setae (Fig. 10). Aedeagus, when retracted in abdomen, with basal orifice facing right. Parameres short and narrow (Figs. 13-15).

Type species. *Mayatyphlus carltoni* Gusarov, **sp. n.**

Etymology. The name *Mayatyphlus* is derived from the word "Maya" (indigenous people of Yucatan and Central America) and the Greek adjective τυφλός (blind). Gender: masculine.



FIGURES 1-12. Details of *Mayatyphlus carltoni* Gusarov, **gen. n., sp. n.** (male paratype). 1 – forebody; 2 – head, ventral view (microsculpture shown on one side only); 3 – prothorax, ventral view; 4 – meso- and metathorax, ventral view (microsculpture shown on one side only); 5 – left mandible, dorsal view; 6 – right mandible, dorsal view; 7 – labrum, dorsal view; 8 – right maxilla, ventral view; 9 – right antenna, dorsal view; 10 – left anterior leg, dorsal view; 11 – left middle leg, ventral view; 12 – left posterior leg, ventral view. Scale bar 0.1 mm (1-6, 8-12), 0.05 mm (7).

Mayatyphlus carltoni Gusarov, sp. n. (Figs. 1-18)

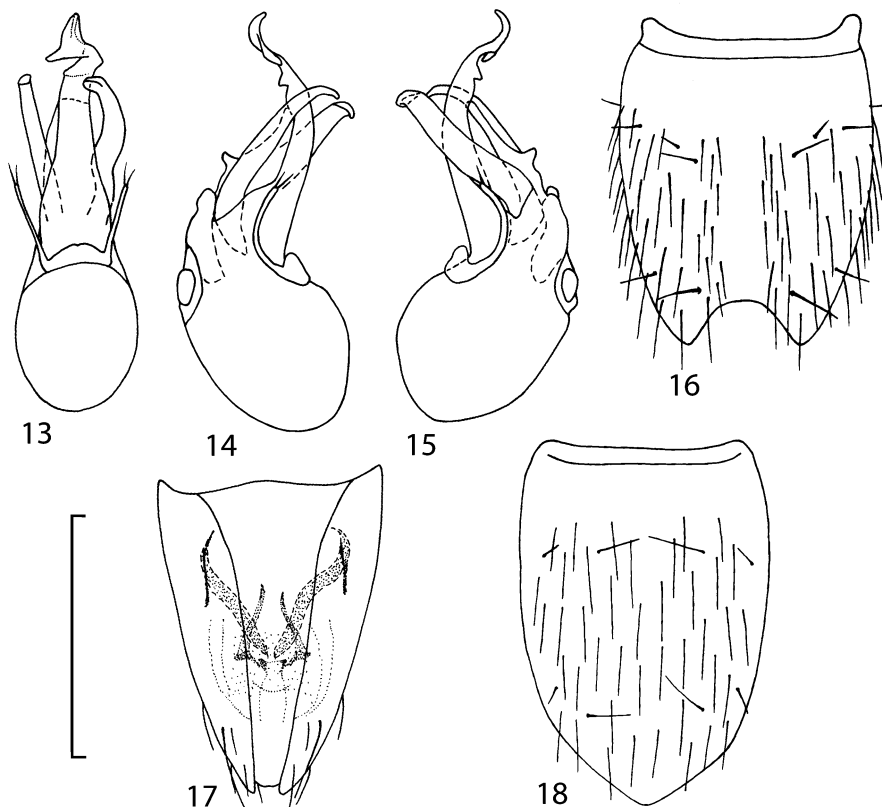
Type material. Holotype: ♂, **BELIZE**: Orange Walk Distr., Rio Bravo Conservation / Management Area, La Milpa Station, Chiche Trail, 17°50'22"N 89°01'12"W, lot #119, berlese (C.E. Carlton & D. Murray), 18.v.1997 (KSEM).

Paratypes: **BELIZE**: ♂, 2 ♀, same data as the holotype (LSAC).

Diagnosis. *Mayatyphlus carltoni* is the only known species of the genus *Mayatyphlus*. If any additional species of *Mayatyphlus* are ever discovered, *M. carltoni* could be distinguished by the shape of the aedeagus, especially the apex of the median lobe (Figs. 13-15), and by the shape of the female accessory sclerites (Fig. 17).

Description. Length 0.7-0.8 mm.

Head with short setae arranged as in Figs. 1-2. Second and third antennal articles as long as wide and twice as wide as article 3, articles 3-9 strongly transverse, 1.6-2.0 times as wide as long, article 10 1.5 times as wide as long, last article as long as wide (Fig. 9).



FIGURES 13-18. Details of *Mayatyphlus carltoni* Gusarov, **gen. n., sp. n.** (paratypes). 13 – aedeagus, parameral view; 14-15 – aedeagus, lateral view; 16 – male sternum 8; 17 – female abdominal segments 9-10, ventral view; 18 – female sternum 8. Scale bar 0.1 mm.

Pronotum with short setae arranged as in Fig. 1, narrowed posteriad, 1.1 times as long as wide, as wide as head and elytra (Fig. 1). Elytra with short setae, with parallel lateral sides (Fig. 1), 1.1 times as long as wide (length measured from humeral level).

Abdominal terga with long setae (Fig. 1).

Male protarsus with adhesive setae (Fig. 10). Male mesotrochanter with denticle (Fig. 11). Male abdominal sternum 8 with broad apical emargination and narrow medial zone devoid of setae (Fig. 16).

Aedeagus with short and narrow parameres, apex of median lobe in lateral view S-shaped, in parameral view asymmetrical, with two subapical processes pointed to the left (Figs. 13-15).

Female abdominal sternum 8 as in Fig. 18. Female accessory sclerites as in Fig. 17.

Distribution. Known from a single locality in Belize.

Natural History. *Mayatyphlus carltoni* presumably inhabits soil and/or leaf litter, and was collected using Berlese funnels.

Discussion

The tribe Neotyphlini is usually considered to be the most primitive tribe in Leptotyphlinae (Coiffait 1963; Newton *et al.* 2000), as all genera of that tribe possess procoxal fissures and some genera have relatively large body size. According to Coiffait (1962) the vestiges of wings can be observed in some Neotyphlini from California.

Coiffait (1963, 1972) and Pace (1996) use slightly different sets of characters to diagnose the tribe Neotyphlini. According to Coiffait (1963, 1972), Neotyphlini is characterized by the presence of procoxal fissure, the absence of deep transverse basal furrows of abdominal sterna and by dilated second and third articles of maxillar palpus. The first two characters may be plesiomorphic and the third is shared with Cephalotyphlini Coiffait, 1963 and Metrotyphlini Coiffait, 1963. According to Pace (1996), the two Italian genera of Neotyphlini can be distinguished from those belonging to other tribes by the absence of deep transverse basal furrows of abdominal sterna, by dilated second and third articles of maxillar palpus, by having distinct ligula and falciform mandibles. Pace does not mention the procoxal fissures nor illustrates this character in the two Italian genera assigned to Neotyphlini. The shape of labium and mandibles vary significantly among the New World genera of Neotyphlini. It seems that the current tribal classification of Leptotyphlinae is likely to change when the phylogeny of this subfamily is analyzed.

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