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A New Genus and Species of Sphaeridiinae from Costa Rica (Coleoptera: Hydrophilidae)

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Abstract

Badioglobus tapanti, **new genus**, **new species** (Hydrophilidae: Sphaeridiinae: Coelostomatini), from Costa Rica is described and illustrated. *Badioglobus* is distinguished from other genera of Coelostomatini by the short first metatarsal segment, widely spaced gular sutures, distinct notosternal sutures, and its large size. A key to the Central American genera of Coelostomatini is presented.

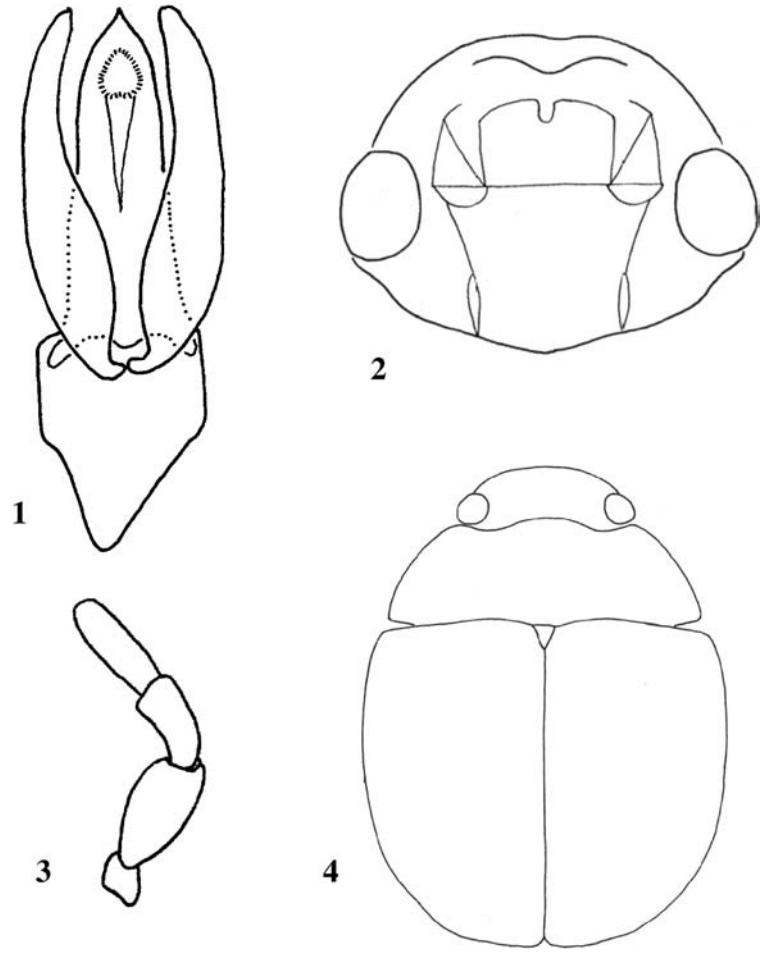
Resumen

Badioglobus tapanti **nuevo género, nueva especie** (Hydrophilidae: Sphaeridiinae: Coelostomatini), de Costa Rica se describe e ilustra. *Badioglobus* se distingue de otros géneros de Coelostomatini por el primer segmento corto del metatarso, las suturas gulares ampliamente separadas, las suturas noto-esternales distintivas, y su tamaño grande. Se presenta una clave para los géneros de tribu Coelostomatini de America Central.

This new genus and species was recognized during an ongoing project revising the Hydrophilidae of Costa Rica. The tribe Coelostomatini contains 18 genera, seven of which occur in the New World (Hansen 1999). *Badioglobus* possesses several features that generally characterize the tribe, including the narrow abutment of the meso- and metasternal elevations between the hind coxae, the first ventrite with a median carina, and the antennal bases concealed by the clypeus. However, this new genus lacks three suggested tribal synapomorphies as defined by Hansen (1995): the presence of well-defined pit-like grove anteromedially on the mesosternum (also absent in *Cyclotypus* Sharp, *Elocomosta* Hansen, and *Rhachiostethus* Hansen), the gular sutures closely aggregated, and a relatively long basal segment of the middle and hind tarsi. The latter two features are also absent in New Zealand endemic genera *Cyloma* Sharp and *Adolopus* Sharp, which have been presumed primitive within the tribe (Hansen 1991, 1995). The sternal and clypeal characters combined with the absence of the autapomorphies for any other tribe seem to place this genus in the Coelostomatini, although it is almost certainly a basal member of the lineage. The presence of distinct notosternal sutures and its large size are also uncommonly observed in the tribe.

Collections in which material is deposited are indicated using the following abbreviations:

AEZS: Collection of the Author, Ithaca, NY.
CNC: Canadian National Collection, Ottawa, Canada.
CUIC: Cornell University Insect Collection, Cornell University, Ithaca, NY.
INBIO: Instituto Nacional de Biodiversidad, Santo Domingo, Costa Rica.
NMW: Naturhistorisches Museum Wien, Austria.
USNM: United States National Museum of Natural History, Washington, DC.



Figs. 1–4. *Badioglobus tapanti*. **1)**Aedeagus, ventral view; **2)** head, ventral view showing gular sutures; **3)** maxillary palpus; **4)** habitus.

Badioglobus, **new genus**
(Figs. 1–4)

Etymology. Derived form the Latin words badius and globus, meaning reddish-brown sphere; masculine.

Type Species. *Badioglobus tapanti*, **new species**.

Description. Dorsal punctation on head, pronotum and elytra distinct and fine. Labrum weakly sclerotized, mostly concealed by clypeus. Clypeus entire, not incised at antennal bases. Maxillary palpi short and symmetrical; barely reaching eye, with second segment swollen (Fig. 3). Apex of mandibles asymmetrically bifid. Labial palpi 2/3 width of mentum. Antennae composed of 9 segments; the 3-segment club mostly compact. Mentum concave anteriorly, with apicomedial

emargination extending posterad about 1/3 of length; deeply pitted. Gular sutures widely separated (Fig. 2). Prosternum tectiform, slightly carinate medially with large anterior tooth; notosternal sutures present. Scutellum slightly longer than wide. Anteriomedial margin of mesosternum strongly elevated, almost as high as the posteriomedial mesosternal projection; postero and centromedial mesosternum raised to form broad, lateral projection, narrowly and basally touching the anterior of the metasternum; without pit-like grove anteromedially. All femora with tibial groves; finely and evenly pubescent; all tarsi with 5 segments. Tibia slightly flattened. Tarsi with sparse setae on dosal face. First tarsomere on middle and hind legs shorter than second. Claws simple; only slightly enlarged at base. Elytra with sutural stria in posterior 1/2 and 9 additional rows of serial punctures, moderately impressed. Abdomen dull and finely pubescent; first visible ventrite carinate on basal 1/2; fifth visible ventrite not emarginate.

Remarks. *Badioglobus* superficially resembles *Cyclotypus* Sharp but the new genus is easily distinguished from this and the other three sympatric coelostomine genera by its larger size, reddish brown coloration, and short first segment of the hind tarsus. These characters combined with the very widely spaced gular sutures and distinct notosternal suture easily separate this genus from all others in the tribe. *Badioglobus* will key to *Adolopus* in Hansen (1991) although it will not fit the description.

Badioglobus tapanti, **new species**
(Figs. 1–4)

Type Locality. Costa Rica, Cartago Province, Tapanti National Park.

Descripton. Length 6.7–7.5 mm. Dorsum and venter reddish brown. Punctation on clypeus dense, moderately impressed; distance between punctures 1.0–1.5× width of one puncture; punctation of pronotum and elytra less impressed and slightly less dense. Aedeagus (Fig. 1) with parameres and median lobe equal in length; parameres flattened laterally; tips of parameres curved ventrally in lateral view. See generic diagnosis for additional characters.

Biology and Distribution. Broadly distributed in Costa Rica. Specimens were collected at lights, litter samples, and malaise traps. Immature stages unknown.

Material Examined. HOLOTYPE. Male. "Quebrada Segunda, P. N. Tapanti/ 1,230 m, Prov. Cart., COSTA/ RICA. May 1993. G. Mora./ L-N-194000, 560000," "Holotype/ Badioglobus/ tapanti/ A. E. Z. Short" (INBIO). PARATYPES. (41). COSTA RICA: Cartago Province, Tapanti National Park, Quebrada Segunda, G. Morra, alt. 1,250 m. Various Dates: May 1992 (AEZS, 1; CNCC, 1; INBIO, 1), June 1992 (AEZS, 1; USNM 1; INBIO, 1), July 1992 (AEZS, 1; CNCC, 1; INBIO, 4), Aug. 1992 (CUIC, 2; USNM, 1; INBIO, 4), Sept. 1992 (INBIO, 2), Oct. 1992, (INBIO, 1), Mar. 1993 (INBIO, 2), May 1993 (CNIC, 1; INBIO, 1), Oct. 1993 (USNM, 2; NHMV, 1; INBIO, 2); Cartago Province, Grano de Oro, Chirripo, Turrialba, P. Campos, alt. 1,120 m, Sept. 1992 (NHMV, 1; INBIO, 1). Guanacaste Province: Rio San Lorenzo, C. Alvarado, alt. 1,050 m, Jul. 1991 (INBIO, 1). Alajuela Province: Rio San Lorencito, Res. For. San Ramon, 5 km N. Col. Palmarena, alt. 900 m, Mar. 1990 (INBIO, 1); San Ramon, Alberto Branes station, Rio San Lorencito, C. Rojas, alt. 800 m, 30 June 1999 (INBIO, 1); San Ramon, Alberto Branes station, Rio San Lorencito, E. Ulate & A. Mora, alt. 850 m, 30 June–5 July 1999 (INBIO, 1); Volcan Tenorio N. P., Upala, Bijagua, Sand Heliconias, A. Lopez, 17 Aug–17 Sept. 2000 (INBIO, 1); Guanacaste N. P., San Ramon Sta., alt, 620 m, 10–21 June, 1994 (INBIO, 1); Upala Bijagua, Heliconias Sta., A. Lopez, 680 m, 16 Sept. 2001 (INBIO, 1); Upala, Alb. Heliconias, Send. Heliconias, alt. 700 m, A. Lopez, 3 Aug. 2000 (AEZS, 1).

Etymology. Named after its type locality, Tapanti National Park.

Key to Genera of Central American Coelostomatini[1]

1 Elytra with 10 distinct rows of serial punctures including sutural stria 3
1′ Elytra without serial punctures, with or without sutural stria 2
2 Elytra with distinct sutural stria in posterior half ..... *Phaenostoma*
2′ Elytra without distinct sutural stria ..... *Phaenonotum*
3 First segment of hind tarsus shorter than the second. First visible ventrite carinate basally. Dorsum reddish brown ..... *Badioglobus* **new genus**
3′ First segment of hind tarsus longer than second. First visible ventrite carinate or not. Dorsum usually black 4
4 First visible ventrite carinate at least on basal half. Mentum of males not covered with short, dense setae ..... *Dactylosternum*
4′ First visible ventrite not carinate on basal half. Mentum of males covered with short, dense yellow setae ..... *Cyclotypus*

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[1] Hebauer (2002) referred two new species (*Cyclotypus heidenfelderi* and *C. tinctus*) from Madagascar to *Cyclotypus*, a genus previously considered endemic to southern Central America. These new species differ in description from the generic concept of *Cyclotypus* by the mentum of the males not bearing dense covering of setae (the mentum of the females of Neotropical *Cyclotypus* are also not glabrous as with the new Madagascan species), the width separating the eyes smaller than 5× the width of each eye, the first ventrite bearing a basal carination, and the lack of the conspicuous pad of dense setae on the ventral face of each tarsus. After reviewing specimens of *Cyclotypus* from Costa Rica, the generic placement these two species is here considered dubious; these species will not key out in the generic key.