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A new species and new records of the genus *Philothalpus* KRAATZ, 1857 from the Central Amazon with a revised key to the Brazilian species (Coleoptera: Staphylinidae: Philothalpina)

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Abstract

A new species of *Philothalpus* KRAATZ, 1857 (Coleoptera: Staphylinidae: Staphylinini: Philothalpina), *P. brasiliensis*, is described from a Central Amazonian inundation forest near Manaus (Brazil). A revised key to the Brazilian species of *Philothalpus* is included. Furthermore, new records are provided for *P. bicolor* (SHARP, 1976) and *P. pecki* CHATZIMANOLIS & ASHE, 2005. The ecological demands of the new species are briefly discussed.

Key words: Coleoptera, Staphylinidae, Staphylinini, Philothalpina, *Philothalpus*, Neotropical Region, new species, inundation forest, Brazil, Central Amazon.

Introduction

The Neotropical genus *Philothalpus* was described by KRAATZ (1857); the type species is *P. fervidus* (ERICHSON, 1840). CHATZIMANOLIS & ASHE (2005) reviewed the species of *Philothalpus*, and they described in detail the complicate taxonomic history of the genus. CHANI-POSSE et al. (2018) transferred *Philothalpus* from the subtribe Xanthopygina to the newly established subtribe Philothalpina. *Philothalpus* differs from the Xanthopygina genera in the presence of a pair of accessory ridges on the anterior basal transverse carina of tergum 3 and in the proportions of the basisternum (see CHANI-POSSE et al. 2018 for details). The species of *Philothalpus* are usually large, mostly colorful, with large eyes, a well-defined neck, and a pore on the male abdominal sternite VII.

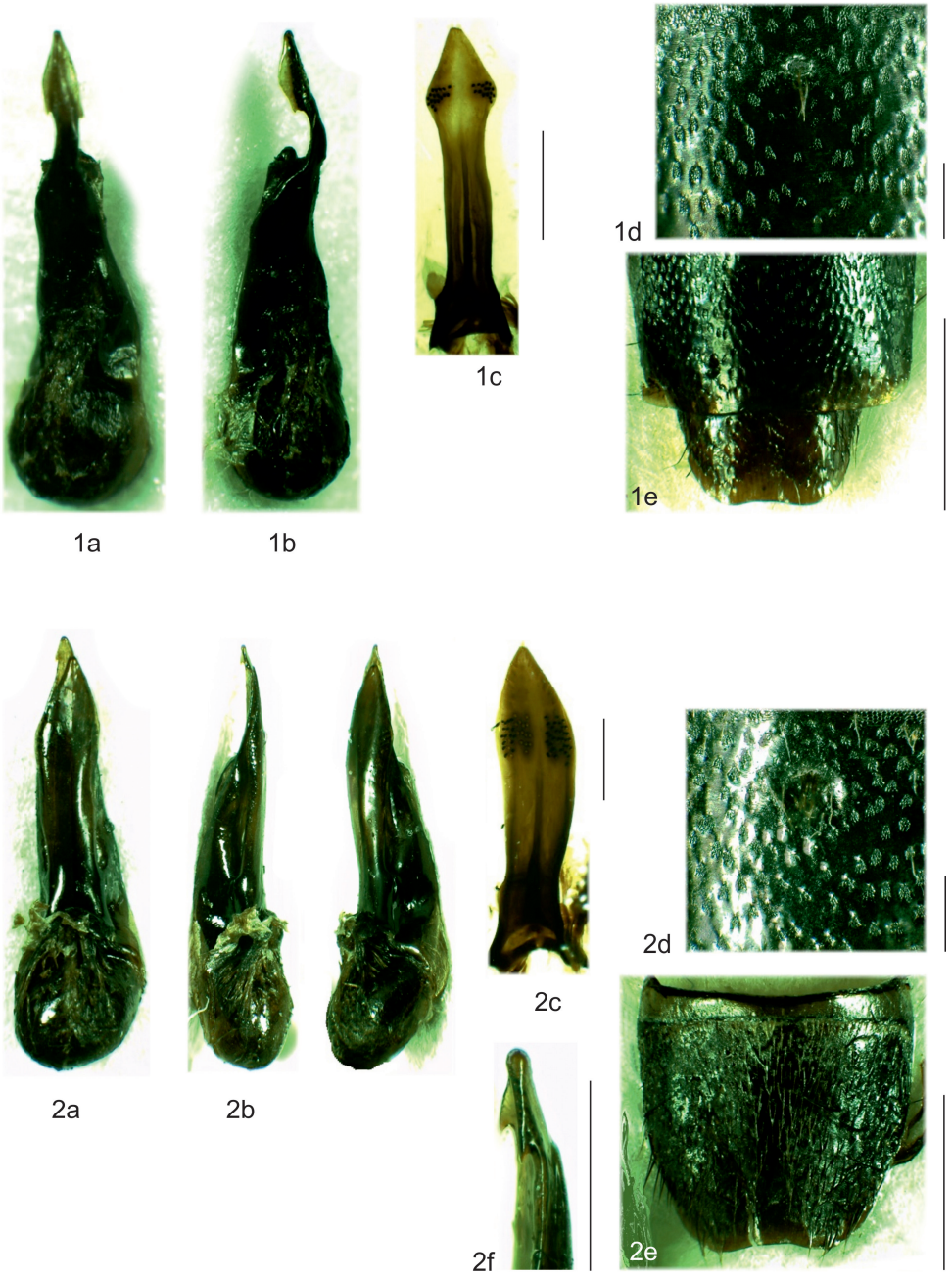
CHATZIMANOLIS & ASHE (2005) listed 21 species, five of these occurring in Brazil. Later, three new species were added from Colombia and Peru (ASENJO & RIBEIRO-COSTA 2009, HOYOS-BENJUMEA & LÓPEZ-GARCÍA 2019)

The material recorded here was collected during an ecological study in 1971/72 in an inundation forest near Manaus, Amazonas, Brazil (IRMLER 1975, 1978, 1979). In this paper, a new species is described, and new records are provided for two other species.

Material and methods

The specimens are deposited in the author's collection (UIC) and in the collection of the Instituto Nacional de Pequisas da Amazônia (INPA). The UIC will be later transferred to the Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany.

For the measurements of total length, the inter-segmental space of the abdominal segments was considered. The lengths of individual tagmata were measured along the midline, their widths at the widest part of the respective tagmata. For the photographs of the species, a Wild M420 photomacroscope was used in combination with a digital camera (Nikon D100). CombineZ5 was used to optimize depth of focus.



Figs. 1–2: 1) *Philothalpus pecki* and 2) *P. brasiliensis*; a) aedeagus in ventral and b) lateral aspect, c) paramere, d) male sternite VII, e) sternite VIII, f) apex of central lobe. Scale bars: a–d, f: 0.5 mm, e: 1 mm.

***Philothalpus brasiliensis* sp.n.**
(Figs. 2A–F, 4A–B)

Holotype ♂ (INPA): BRAZIL: Amazonas, Manaus, Lago Janauarí, 60°10'W 3°1'S, várzea forest, pitfall trap, 17.I.1972, leg. U. Irmler, #136. **Paratypes**: 3 ♂♂, 9 ♀♀ (UIC), same area and collector as holotype, with the following dates of sampling: 21.IX.1971, 17.XI.1971, 2.XII.1971, 25.XII.1971, 17.I.1972, 25.II.1972, 8.III.1972, 6.IV.1972.

DESCRIPTION: Length: 12–15 mm. Coloration: Black; with light pubescence; pronotum with slight greenish shine; abdominal tergite VI with wide yellow margin; abdominal tergite VII with yellow base.

Head: 1.78 mm long, 2.28 mm wide; eyes large, prominent; postocular space one tenth of eye length; posterior margin straight; neck half as wide as head width; anterior margin of clypeus smoothly rounded; labrum with central emargination; punctation dense and deep; on average, interstices between setiferous punctures as wide as diameter of punctures; close to posterior margin punctation much denser, nearly coriaceous; setae close to neck longer than on vertex and in supraocular line; pubescence yellow, pointing posteriad; midline on central vertex and anterior part of clypeus without punctation; with dense micropunctation, except on impunctate parts of midline and clypeus; surface matt. Antennae slightly shorter than head and pronotum combined; second antennomere shorter than first, one third as long as third antennomere; third antennomere more than two times longer than width at apex; following antennomeres shorter than basal three antennomeres; slightly increasing in width and decreasing in length; fourth antennomere longer than wide; tenth antennomere slightly wider than long; all antennomeres densely pubescent. Pronotum: 2.84 mm long, 2.41 mm wide; widest in anterior third; slightly narrowed posteriad; widely rounded anteriad; without distinct anterior angles; posterior angles obtuse, but distinct; posterior margin smoothly curved; umbilicate punctation slightly finer than on head; on average, interstices between setiferous punctures as wide as diameter of punctures; umbilicate punctation evenly covering surface; setae pointing posteriad; with fine and dense micropunctures between umbilicate punctation; surface matt. Elytra: 3.38 mm long, 3.75 mm wide; humeral angles distinct; sides slightly divergent posteriad; posterior angles obtuse; posterior margin sinuate; apex gaping at suture; setiferous punctation dense and deep; nearly coriaceous; setae pointing posteriad; without microsculpture. Abdomen with dense setiferous punctation; punctures slightly less deep than on elytra; setae pointing posteriad; pore on male abdominal sternite VII large; much larger than adjacent punctures; sternite VIII slightly emarginate at posterior margin; posterior angles widely rounded; base of sternite coarsely punctate; at posterior margin wide stripe impunctate; at central emargination impunctate area expanded triangularly anteriad; tergite VIII with smoothly rounded posterior margin; whole tergite covered by coarse umbilicate punctation.

Aedeagus asymmetrical; in ventral aspect with thick basal bulb; central lobe wide, smoothly continuously convergent from base to apex; apex acute, arrow-like; in lateral aspect, central lobe suddenly flattened in apical third; paramere thick, with asymmetrical shaft, widened in apical third, apex acute, arrow-like, but without hook-like prominences as in central lobe; slightly shorter than central lobe.

DIFFERENTIAL DIAGNOSIS: *Philothalpus brasiliensis* is closely related to *P. pecki* CHATZIMANOLIS & ASHE, 2005. In the above-mentioned ecological study (IRMLER 1978, 1979) they were regarded as a single species. Size and color are identical, as well as the structure of the surface. The yellow posterior margin of abdominal segment VI and the base of segment VII seem to be slightly shorter, and the pore on the male abdominal sternite VII is smaller in *P. pecki*. The apex of the central lobe in *P. brasiliensis* shows an arrow-like structure similar to that of *P. pecki*, but the central lobe and the paramere are more compact, wider, much shorter,

and without the constricted part. The paramere is simply narrowed to the acute apex. The sensilla are placed in paired fields at the widest part of the paramere, but they are larger than in *P. pecki*.

ETYMOLOGY: The name of the species (an adjective) refers to the country, where it was collected.

Figs. 3–4: 3) *Philothalpus pecki* and 4) *P. brasiliensis*; a) forebody, b) antenna. Scale bars: a: 5 mm, b: 1 mm.

Philothalpus bicolor (Sharp, 1976)

BRAZIL: Amazonas, Manaus, Lago Janauarí, 60°10'W 3°1'S, várzea forest, pitfall trap, 21.IX.1971, leg. U. Irmler, #162a, 1 ♀ (UIC).

Philothalpus pecki Chatzimanolis & Ashe, 2005

(Figs. 1A–E, 3A–B)

BRAZIL: Amazonas, Manaus, Lago Janauarí, 60°10'W 3°1'S, várzea forest, pitfall trap, 6.X.1971, leg. U. Irmler, #136, 1 ♂ (UIC).

Key to the Brazilian species of the genus *Philothalpus*, based on the key provided by Chatzimanolis & Ashe (2005)

1 Head and pronotum shiny, not with numerous closely spaced micropunctures…… ..... *nitidus* Chatzimanolis & Ashe, 2005

- Head and pronotum matt; with numerous closely spaced micropunctures..... 2

2 Head and pronotum orange, surface of elytra matt due to dense rugose microsculpture between and within umbilicate punctures..... 3

– Head and pronotum dark with greenish overtones, surface of elytra shiny, without rugose microsculpture 4

3 Antennomere 10 distinctly transverse, apex of paramere long and slender ... *mundus* (SHARP, 1876)

– Antennomere 10 subquadrate, apex of paramere asymmetrically narrowed to acute apex…….. ..... *bicolor* (SHARP, 1876)

4 Antennae elongate, antennomeres 4–7 distinctly longer than wide, antennomeres 8–10..... 5

– Antennae less elongate, antennomeres 4–5 subquadrate, antennomeres 6–7 quadrate, antennomeres 8–10 distinctly transverse..... *antennaria* (BERNHAUER, 1907)

5 Transverse yellow stripe on posterior margin of abdominal segment VI and base of segment VII small, pore on male sternite VII not much larger than adjacent punctures (Fig. 1D), paramere arrow-like (Fig. 1C) ..... *pecki* CHATZIMANOLIS & ASHE, 2005

– Transverse yellow stripe on posterior margin of abdominal segment VI and base of segment VII wider; pore on male sternite VII distinctly larger than adjacent punctures (Fig. 2D), paramere thicker, not arrow-like (Fig. 2C) ..... *brasiliensis* sp.n.

Remarks on distribution and ecology of the Brazilian species of *Philothalpus* with matt head and pronotum

Philothalpus bicolor and *P. pecki* are known from the Amazon Basin, *P. pecki* at least up to the lower Andean slopes in Peru (Loreto). According to the original description, entitled "Contributions to an insect fauna of the Amazon Valley" (SHARP 1876: 140), *P. bicolor* was collected in "St. Paulo", without any other details. In the same paper Sharp reported numerous other species from "St. Paulo", as for instance *Xenopygus analis* (ERICHSON, 1840), which was collected in "Pará, Obydos, Tapajos, Ega, St. Paulo" (SHARP 1876: 140). Pará, Obydos [= Óbidos], Tapajos [= Tapajós], and Ega [= Tefé] are definitely located in the Amazon region. In his description of "*Epipeda cava*", SHARP (1876: 46) wrote: "St. Paulo (Amazons)". It is therefore quite obvious, that "St. Paulo" actually refers to São Paulo de Olivença near the western edge of the state of Amazonas and not to São Paulo in southeastern Brazil.

Philothalpus mundus is known from Manaus up to the lower slopes of the Andes in Peru and Bolivia. *Philothalpus antennaria* is mainly distributed in southern Brazil, northern Argentina and eastern Paraguay. In Brazil, it was found up to the southern Amazon Basin.

CHATZIMANOLIS & ASHE (2005) noted that *P. antennaria* was collected from dung, carrion, fallen fruits, and leaf litter. For the remaining three species mentioned above no ecological details were recorded.

Philothalpus brasiliensis was found in the Amazonian inundation forest of the várzea type during the emersion phase from September 1971 to April 1972. It was collected in pitfall traps on the forest floor after the inundation (Fig. 5). The pitfall traps were emptied every three weeks. The investigated forest belongs to the transitional várzea forest between the Río Solimões with clay-rich whitewater and the Río Negro with humus-rich blackwater (IRMLER 1977, 1978). This species was found only in this transitional várzea forest and not in the typical várzea forest influenced only by the whitewater of the Río Solimões, and it was not found in the igapó forest influenced only by the blackwater of the Río Negro. *Philothalpus brasiliensis* occurred during the entire emersion phase on the forest floor only. It was not found in tree traps, which were also installed in the forest at the same time. Thus, the species does not seem to migrate to the canopy during the immersion phase, but it seems to retreat to dry places at the margins of the investigated forest. *Philothalpus brasiliensis* was more often collected in the higher parts of the forest (Fig. 5). No specimens were found by hand-sampling on the forest floor carried out at the same time.

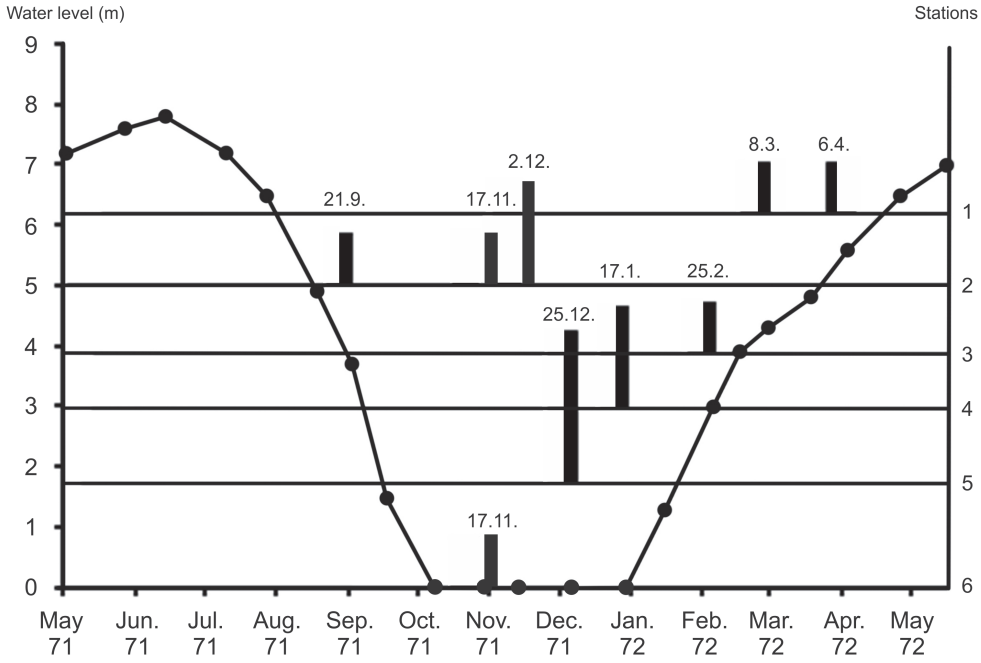


Fig. 5: Diagram showing spatial and seasonal distribution of the 13 specimens of *Philothalpus brasiliensis* collected in pitfall traps in the várzea forest at Lago Janauarí in the years 1971/72. Line with dots: seasonal change of the water level; horizontal lines 1–6: elevation of pitfall traps in relation to water level; column length indicates number of specimens (shortest column = single individual); the marks on the horizontal axis refer to the 15th day of the respective month.

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References

ASENJO, A. & RIBEIRO-COSTA, C.S. 2009: Two new species of the Neotropical genus *Philothalpus* Kraatz from Peru (Coleoptera: Staphylinidae: Xanthopygina). – Zootaxa 2286: 49–57.

CHANI-POSSE, M.R., BRUNKE, A.J., CHATZIMANOLIS, S., SCHILLHAMMER, H. & SOLODOVNIKOV, A. 2018: Phylogeny of the hyper-diverse rove beetle subtribe Philonthina with implications for classification of the tribe Staphylinini (Coleoptera: Staphylinidae). – Cladistics 34: 1–40.

CHATZIMANOLIS, S. & ASHE, J.S. 2005: Revision and phylogeny of the Neotropical genus *Philothalpus* Kraatz (= *Eugastus* Sharp and *Allostenopsis* Bernhauer) (Coleoptera: Staphylinidae: Xanthopygina). – Insect Systematics and Evolution 36: 63–119.

HOYOS-BENJUMEA, D. & LÓPEZ-GARCÍA, M.M. 2019: A new species of *Philothalpus* Kraatz (Coleoptera: Staphylinidae) from the Andes of Colombia. – The Coleopterists Bulletin 73 (2): 428–432.

IRMLER, U. 1975: Ecological studies of the aquatic soil invertebrates in three inundation forests of Central Amazonia. – Amazoniana 5: 337–409.

IRMLER, U. 1977: Inundation-forest types in the vicinity of Manaus. – Biogeographica 8: 17–29.

IRMLER, U. 1978: Die Struktur der Carabiden- und Staphylinidengesellschaften in zentralamazonischen Überschwemmungswäldern. – Amazoniana 6: 301–326.

IRMLER, U. 1979: Abundance fluctuations and habitat changes of soil beetles in Central Amazonian inundation forests (Coleoptera: Carabidae, Staphylinidae). – Studies on Neotropical Fauna and Environment 14 (1): 1–16.

KRAATZ, G. 1857: Naturgeschichte der Insecten Deutschlands. Erste Abtheilung Coleoptera. Zweiter Band. Lieferung 3–6. – Berlin: Nicolai, pp. 377–1080.

SHARP, D. 1876: Contributions to an insect fauna of the Amazon Valley. Coleoptera—Staphylinidæ. – The Transactions of the Entomological Society of London 1876: 27–424.

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