



Aleochara verecunda Sharp, 1876 Rediscovered from the Brazilian Amazon (Coleoptera: Staphylinidae: Aleocharinae)

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***ALEOCHARA VERECUNDA* SHARP, 1876 REDISCOVERED FROM THE BRAZILIAN AMAZON (COLEOPTERA: STAPHYLINIDAE: ALEOCHARINAE)**

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ABSTRACT

Aleochara verecunda Sharp, 1876 was considered a *species inquirenda* in the latest revision of the Brazilian *Aleochara* (*Aleochara*) Gravenhorst, 1802 (Staphylinidae: Aleocharinae). However, recently collected specimens identified as *A. verecunda* are here reported from Acre and Pará, two states in the Brazilian Amazon region. The species is easily distinguished from the other Brazilian *A. (Aleochara)* species by the two first antennomeres (scape and pedicel), which are much lighter in color than the others.

Keywords: rove beetle, taxonomy, distribution, Neotropics, decaying organic material

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INTRODUCTION

Aleochara Gravenhorst, 1802 is one of the most speciose genera of rove beetles, with about 545 species found throughout the world (Newton 2022). Adults and larvae of *Aleochara* are found in fly-infested habitats, where they eat the adults and larvae of Diptera. *Aleochara* larvae are obligatory ectoparasites inside puparia of cyclorrhaphous Diptera (Klimaszewski and Jansen 1993). In Brazil, there are 28 species in four subgenera (Newton and Caron 2022). Caron *et al.* (2019) reviewed the *Aleochara (Aleochara)* species from this country. *Aleochara (A.) verecunda* Sharp, 1876 was considered a *species inquirenda*, since the authors had not found specimens of this species, nor had they studied the holotype. However, a few specimens of *A. (A.) verecunda* were recently collected. Here we redescribe it, provide a diagnosis, geographical distribution records, and notes on the natural history of the species. An updated key to the Brazilian *A. (Aleochara)* is also provided.

MATERIAL AND METHODS

Studied specimens are stored at the Coleção Entomológica do Setor Palotina (CESP), Department of Biodiversity, Federal University of

Paraná, Palotina, Brazil, and the Natural History Museum (BMNH), London, United Kingdom. Dried specimens were boiled in hot water for five minutes, then abdominal segments VIII–X were extracted and left in a cold solution of 10% potassium hydroxide overnight. Later, the dissected parts were treated in a bath of acetic acid to neutralize the hydroxide and then water to remove any residue. The dissections were carried out under a stereoscopic microscope, while the dissected parts were photographed with a light microscope, each part around 10 frames. The frames were combined into one focused image using Combine ZP software in “Do weighted average” mode. The dissected parts were placed into microvials with glycerin and pinned with the specimen. The presentation of labels follows Caron *et al.* (2019), basic terminology follows Klimaszewski (1984), and the diagnosis follows the glossary of ICZN (1999).

RESULTS

***Aleochara (Aleochara) verecunda* Sharp, 1876 (Figs. 1–13)**

Aleochara verecunda Sharp 1876: 69 (description, type locality: “Tapajós”). Duvivier 1883: 101 (catalog). Bernhauer and Scheerpeltz 1926: 779



Figs. 1–3. *Aleochara (A.) verecunda*. 1) Holotype, dorsal view; 2) Holotype labels; 3) Male, dorsal view. Scale bar (Fig. 3): 1 mm. Images in Figs. 1–2 by Keita Matsumoto, © Natural History Museum, London.

(catalog). Blackwelder 1944: 167 (checklist). Caron *et al.* 2008: 833 (checklist). Fery 2013: 81 (checklist). Caron *et al.* 2019: 28 (mention as *species inquirenda*).

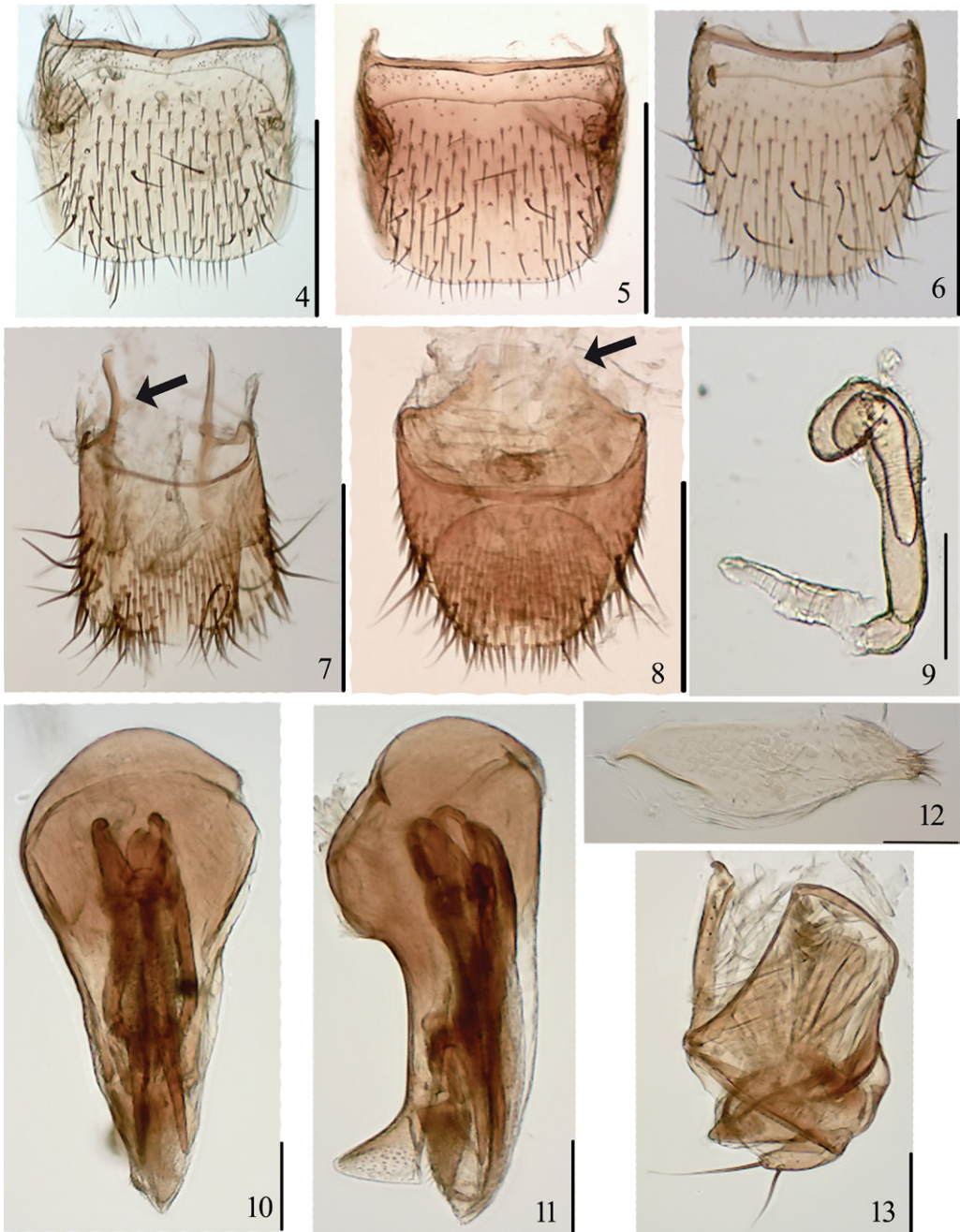
Type Specimen. Studied via photos (Figs. 1, 2). Holotype, determined as female by Sharp (1876: 70), deposited in BMNH, with the following labels: (1) “*Aleochara verecunda* \amazonas. Type D.S.” [white label, handwritten]; (2) “Holo\Type” [circular label, white with red border, the first line handwritten and second printed in black]; (3) “Tapajós” [circular label, green, handwritten]; (4) “S. America:” [white label with median longitudinal line in green, printed in black]; (5) “Sharp Coll\1905-313.” [white label, printed in black]; (6) “A. verecunda\Type D.S.” [white label, handwritten]; (7) “Holotype\Aleochara\verecunda Sharp\det. R.G. Booth 2014” [white label, the three first lines handwritten, the last line printed in black]; (8) “(QR Code)\NHMUK015009704”. Note: Sharp described the species based on a female.

Additional Specimens (8). CESP: Brazil: three specimens: (1) “BRASIL: Acre, Rio\Branco, 10°01'49.8"S;\67°41'00.5"W, Pitfall com\coração boi, 06.V.2016, W.P.\Sutil & F.A. Oliveira\(\leg.)”. One specimen: (1) “BRASIL: Acre, Rio\Branco, 10°01'49.8"S;\67°41'00.5"W, Pitfall com\coração boi, 20.VI.2016, W.P.\Sutil & F.A. Oliveira\(\leg.)”. One specimen: (1) “BRASIL: Acre, Rio\Branco, 10°01'49.8"S;\67°41'00.5"W, Pitfall com\coração boi, 13.VI.2016, W.P.\Sutil & F.A. Oliveira\(\leg.)”.

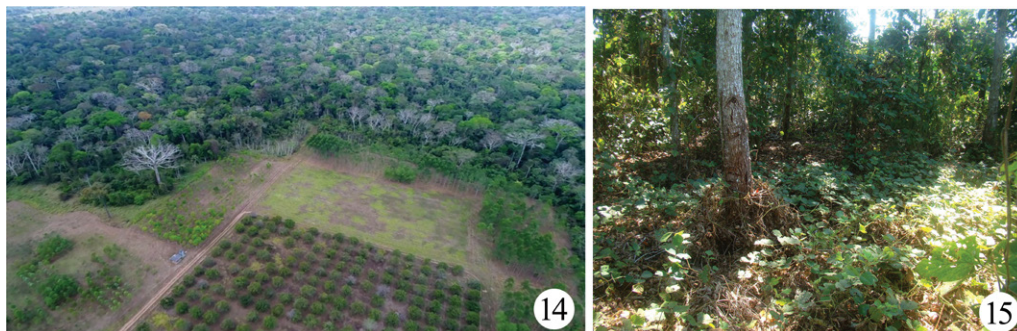
Two specimens: (1) “BRASIL: Acre, Rio\Branco, 10°01'49.8"S;\67°41'00.5"W, Pitfall com\banana, 04.VII.2016, W.P.\Sutil & F.A. Oliveira\(\leg.)”. One specimen: (1) “BRASIL: Acre, Rio\Branco, 10°01'49.8"S;\67°41'00.5"W, Pitfall com\fezes, 05.VIII.2016, W.P.\Sutil & F.A. Oliveira\(\leg.)”.

Diagnosis. *Aleochara verecunda* differs from other Brazilian species of *Aleochara* by the two first antennomeres (scape and pedicel) distinctly lighter than the others; apex of median lobe of aedeagus strongly curved, directed ventrad, and with apical margin large and truncate; capsule of spermatheca half the length of chamber, and without apical invagination.

Redescription. Maximum body length: 4.5 mm. Maximum elytral width: 1.5 mm. Body (Fig. 3) brown to dark brown, with elytra, appendices, and apical part of the abdomen (posterior half of segment VII to X) light brown to rusty brown. Antennae with two first antennomeres lighter than the others, 5 to 10 darker than 3 and 4. Head somewhat darker than the pronotum. Elytron with a distinct darker spot on the outer apical angle, spot of same color as pronotum. Dorsal surface glossy and covered with fine golden setae, setigerous pores impressed. Head with setigerous punctation, disc with sparse pubescence directed anteriorly. Antennomere 2 half the length and slightly narrower than first; 3 longer than 2; 4 transverse; 5–10 similar in shape, each distinctly transverse; 11 approximately twice as long as 10, semi-triangular. Antennomeres 1–4 glossy with long, sparse, black setae; 5–11 dull and covered by



Figs. 4–13. *Aleochara (A.) verecunda*. **4)** Tergum VIII, male, dorsal view; **5)** Tergum VIII, female, dorsal view; **6)** Sternum VIII, male, ventral view; **7)** Tergum IX and X, male, dorsal view; **8)** Tergum IX and X, female, dorsal view; **9)** Spermatheca; **10)** Aedeagus, median lobe, dorsal view; **11)** Aedeagus, median lobe, lateral view; **12)** Sternum IX, male, ventral view; **13)** Aedeagus, lateral lobe, lateral view. Scale bars: Figs. 4–8: 0.6 mm, 9–13: 0.15 mm.



Figs. 14–15. Forest fragment where *Aleochara (A.) verecunda* has been collected (Brazil, Acre). **14)** Aerial photograph; **15)** Detail of the area.

short, white setae, with long, sparse, black setae on apex of each one, 11 with black macrosetae on a transverse circular line in the middle of the antennomere. Pronotum with setigerous punctation, setae directed posteriad at middle of disc and directed posteriad and laterad elsewhere. Mesoventral process somewhat truncate and almost reaching the apex of mesocoxae. Elytra shorter than pronotum; with setigerous punctation, denser than that on pronotum; setae directed posteriad. Abdomen narrowed posteriorly; terga with coarse setigerous punctation, tergal and sternal pubescence directed posteriad. Male: tergum VIII as long as wide; posterior margin slightly emarginate at middle (Fig. 4). Sternum VIII as long as wide; posterior margin broadly rounded (Fig. 6). Tergum IX with asymmetrical ventral struts, similar in length, the left with one short accessory arm directed laterad (Fig. 7, arrow). Tergum X with posterior margin emarginate at the middle (Fig. 7). Sternum IX three times longer than wide (Fig. 12). Aedeagus: median lobe elongate with base somewhat bulbous (Fig. 10); apex strongly curved, directed ventrad, apical face large and truncate (Fig. 11). Lateral lobe short (Fig. 13).

Female: similar to male, except tergum VIII with posterior margin truncate (Fig. 5). Tergum IX with ventral anterior margin acute at median angle (Fig. 8, arrow). Tergum X with anterior and posterior margin truncate to slightly rounded (Fig. 8). Sternum VIII with short setae restricted to posterior margin. Spermatheca long, L-shaped, capsule half chamber length, and without apical invagination (Fig. 9).

Geographical Records. The only previous record of *A. (A.) verecunda* was from Brazil (Pará, the type locality) (Caron *et al.* 2019). This is the first report of this species in Acre, another Brazilian state.

Remarks. Sharp (1876) described the species as similar to *Aleochara prisca* Sharp, 1876, which can

be separated from *A. verecunda* by the “pale basal joints of the antennae”.

Natural History. Specimens from Acre were collected from May to August using three different baits (decaying bovine heart, banana, and human feces). The study was carried out in a forest patch located in the Experimental Field of Embrapa Acre, 10°01'49.8"S, 67°41'00.5"W, altitude of 143 m (Figs. 14, 15). The forest remnant is characterized as an open ombrophilous forest (Amazon biome), with an area of approximately 800 ha bordered by two properties with pastures. The phytophysionomy of this forest is predominantly open, with the presence of bamboo (*Guadua* sp.; Poaceae), palm trees (Arecaceae), and vines. The climate is Aw (Köppen classification), a hot and humid monsoon climate, with a well-differentiated dry season between the months of June and October (FUNTAC 1989; Oliveira 1994; Oliveira and Braz 1998).

KEY TO BRAZILIAN SPECIES OF *ALEOCHARA* (*ALEOCHARA*)

[modified from Caron *et al.* (2019)
("C19") to include *A. verecunda*]

1. Head distinctly darker than pronotum (C19: fig. 1A) 2
- 1'. Head and pronotum of the same color, sometimes head slightly darker than pronotum (C19: fig. 3A) 4
2. Antennae distinctly lighter than head; median lobe of aedeagus with hook-like apical tooth (directed dorso-posteriad) (C19: fig. 22); female abdominal tergum X truncate apically (C19: fig. 25) ***A. mundana* Sharp, 1876**
- 2'. Antennae of the same color or slightly lighter than head; apex of median lobe of aedeagus toothless; female abdominal tergum X emarginate apically 3

3. Male tergum X with anterior margin truncate (C19: fig. 28); female ventral anterior margin of tergum IX with weakly sclerotized area and rounded median angle (C19: fig. 34)
..... ***A. prisca* Sharp, 1876** (in part)
- 3'. Male tergum X with anterior margin strongly arcuate (C19: fig. 10); female ventral anterior margin of tergum IX without weakly sclerotized area and acute median angle (C19: fig. 16)
..... ***A. auricoma* Sharp, 1876**
4. Abdominal tergum VIII two times wider than long (C19: fig. 26); apex of median lobe of aedeagus toothless and curved on apical third in lateral view (directed ventrad) (C19: fig. 31); female ventral anterior margin of tergum IX with weakly sclerotized area and rounded median angle (C19: fig. 34) ***A. prisca*** (in part)
- 4'. Abdominal tergum VIII as wide as long, or slightly transverse; apex of median lobe of aedeagus with a tooth (directed dorsad or ventrad) or, if toothless, apical one-third of ventral median lobe straight in lateral view; female ventral anterior margin of tergum IX with sclerotized area and with acute median angle 5
5. Elytra yellowish brown to rusty brown with a distinct darker spot on the external and apical angle, spot of the same color as pronotum (C19: fig. 5) 6
- 5'. Elytra entirely reddish to black (C19: fig. 6), sometimes with very weak darker spot on the external and apical angle (C19: fig. 7) 8
6. Median lobe of aedeagus curved on apical third (directed dorsad) (C19: fig. 40); capsule of spermatheca narrow apically and with one elongate apical invagination (C19: fig. 44)
..... ***A. bugnioni* Fauvel, 1901**
- 6'. Median lobe of aedeagus toothless, or if toothed, apex strongly curved directed ventrad; capsule of spermatheca without apical invagination ... 7
7. Median lobe of aedeagus straight on apical third (not curved) (C19: fig. 50); capsule of spermatheca very long, similar in length to the chamber (C19: fig. 54) ***A. lustrica* Say, 1832**
- 7'. Median lobe of aedeagus with apex strongly curved, directed ventrad, apical surface large and truncate (Fig. 11); capsule of spermatheca one-half length of chamber (Fig. 9)
..... ***A. verecunda* Sharp, 1876**
8. Male tergum VIII distinctly serrate apically, bearing about 13 teeth (C19: fig. 55), apex of median lobe of aedeagus with short tooth (directed ventrad) (C19: fig. 60); capsule of spermatheca elongate (C19: fig. 64)
..... ***A. chrysorrhoea* Erichson, 1839**
- 8'. Male tergum VIII gently serrate apically, with more than 20 very short teeth (C19: fig. 65), apex of median lobe of aedeagus toothless (C19:

fig. 70); capsule of spermatheca globose (C19: fig. 74) ***A. bonariensis* Lynch, 1884**

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