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## Species of *Corticeus* Piller & Mitterpacher from Peru

(Coleoptera, Tenebrionidae, Hypophlaeini)

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A new species of *Corticeus* Piller & Mitterpacher, 1783 from Peru (Amazon area) is described and illustrated, *Corticeus hauthii* spec. nov. The following species are new for Peru: *Corticeus expeditus* Bremer, 1992, *Corticeus mexicanus* ssp. *argentinus* (Pic, 1914), *Corticeus plaumanni* Bremer, 1990, and *Corticeus tuberculatus* Triplehorn, 1979. These species are all known from the Amazon area of Peru.

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### Introduction

The Hypophlaeini of Latin America are not systematically studied at present. From Peru, only *Corticeus* (*Stenophloeus*) *rufipes* (Fabricius, 1801) and *Corticeus* (*Corticeus*) *notialis* Bremer & Triplehorn, 1999 have been reported to date (Smith et al. 2015).

The author had the opportunity to identify unsorted *Corticeus* of the US National Museum of Natural History, Washington DC, and material from the Zoologische Staatssammlung, Munich, the latter collected in the “ACP Panguana” (ACP = Área de Conservación Privada; Spanish for Private Nature Reserve) which is managed by Dr. Juliane Diller from the ZSM. It is situated on the southern bank of the Río Yuyapichis, which is an eastern affluent of the Río Pachitea in the Amazon area of Peru. Additionally, Dr. R. Grimm, Neuenbürg, informed me about the *Corticeus* species of his collection from Peru.

Within the material just mentioned I discovered one new species and also other species which were previously not known from Peru. The description of the new species and annotations on other species of Peru are the topic of the present paper.

The finding of a peculiar species in Peru is especially noticeable: *Corticeus tuberculatus* Triplehorn, 1979. This species was previously only known from Cuba. *C. tuberculatus* has small tubercles on frons and clypeus and a denticulation on the lateral edges

of protibiae and mesotibiae; these characters are special and not found in any other species of the already known and published 240 *Corticeus* species worldwide.

In a preceding paper on the *Corticeus* of the Papuan region (Bremer 2015) I noted that *Corticeus* of the subgenera *Corticeus* Piller & Mitterpacher, *Stenophloeus* Blair, 1921 (and of some other subgenera which are not present in South America) have the tarsal formula 5–5–4 as it is found in other Tenebrionidae, while many very small species of *Corticeus* (e. g. the species of the subgenus *Tylophloeus* Bremer, 1998, but also species of other subgenera which are not present in South America) have the tarsal formula 4–4–4. *Corticeus* species with the tarsal formula 4–4–4 also occur in South America. The taxonomic implications of this finding on the generic status of *Corticeus* Piller & Mitterpacher have not been investigated yet.

### Abbreviations

CG	Collection of Dr. Roland Grimm, Neuenbürg, Germany
DEI	Deutsches Entomologisches Institut, Müncheberg, Germany
HMNH	Hungarian Museum of Natural History, Budapest, Hungary

MCZC	Museum of Comparative Zoology, Harvard University, Cambridge, Mass., USA
MHNSM	Museo de Historia Natural Javier Prado of the University San Marcos, Lima, Peru
MNHN	Muséum National d'Histoire Naturelle, Paris, France
OSUC	Ohio State University Collection of Insects and Spiders, Columbus, Ohio, USA
USNM	US National Museum of Natural History (Smithsonian Institution), Washington, USA
ZSM	Zoologische Staatssammlung, Munich, Germany

## Taxonomy

### *Corticeus hauthi* spec. nov.

Fig. 1

**Types.** Holotype (sex not determined by genitalia preparation because of the rigidity of the specimen, which was stored in alcohol before); collecting data: Peru, Dept. Huánuco, Panguana ACP, Río Yuyapichis, 9°37' S 74°56' W, blacklight trap, XII.2015, J. Monzón leg. (deposited in MHNSM). – Paratypes: With the same label data (6 ZSM, 1 USNM) (sex not determined) – Peru, Huánuco Dept., Panguana ACP, Río Yuyapichis, 9°37' S 74°56' W, road to Estanque, trap at a higher level above ground, 2015 (no collector's name indicated) (5 ZSM).

**Diagnosis.** Very small *Corticeus* (<2.4 mm); elytra of medium length, subcylindrical; pronotum slightly longer than wide, with subparallel sides, front corners rounded, hind corners allusively angular; frons relatively narrow; eyes large; genae narrow, flat, reaching the anterior margin of head; antennae short, antennomeres 6–10 wider than long; antennomere 11 pear-shaped; outer sides of mesotibiae terminate in a sharp angle, tarsal formula 4–4–4; head and pronotum brown to dark brown (in the holotype nearly black), slightly microreticulated, elytra brown to yellow and darkening towards apex in mature specimens.

This species belongs to a group of some tiny species with a similar shape, coloration and the tarsal formula 4–4–4; all of them occur either in South America or – one species – also in Central America: *Corticeus brevis* (Kulzer, 1964), *Corticeus plaumanni* Bremer, 1990 and *Corticeus abditus* Bremer & Triplehorn, 1999.

*Corticeus brevis* is only known from South Brasil at present (body length 1.91–2.44 mm). The elytra of *C. brevis* are shorter than those of *C. hauthi* (length/width 1.62–1.83). The punctures on elytra are smaller and less dense in *C. brevis* than in *C. hauthi*. The coloration of *C. brevis* is similar to that of *C. hauthi*.

So far *Corticeus plaumanni* was only known from

the Catarina Prov. of SE Brasil but, concerning its finding in the Amazon area of Peru, see below. This species is slightly more compact and somewhat larger (body length 2.57–2.80 mm) than *C. hauthi*. The elytra of *C. plaumanni* are longer than those of *C. hauthi* (length/width 2.11–2.17). Additional data on *C. plaumanni*: length elytra/length pronotum 1.94–1.98; pronotum: length/width 1.05–1.10; width head/width frons 2.18; width frons/width one eye 1.83. *C. plaumanni* possesses a uniformly castaneous upper side (the pronotum of *C. plaumanni* is only slightly darker than the elytra) while the pronotum of *C. hauthi* is either dark brown or brown and the frontal three fourth of elytra are yellow or lighter brown (only the posterior third of elytra may be darkened); the pronotum of *A. plaumanni* is more microreticulated than that of *A. hauthi*; the antennae of *C. plaumanni* are moderately longer and less densely articulated than those of *C. hauthi*. Shape of pronotum, eyes and width of frons is the same in both species.

*Corticeus abditus* has a similar shape of head, pronotum and elytra as *C. hauthi*. *C. abditus* presents a wide distribution and occurs from South Brasil up to Costa Rica. Most specimens of this species are longer than those of *C. hauthi* (body length of specimens of *C. abditus* 2.03–2.51 mm); its elytra are mostly also longer (length/width 2.05–2.55); the coloration of its upper side is uniformly pale yellow and therefore contrast to that of *C. hauthi*; the punctures of pronotum and elytra of *C. abditus* are smaller and wider separated than those of *C. hauthi*.

## Description

**Measurements.** Body length: 1.85–2.37 mm. Body width: 0.53–0.72 mm.

**Ratios:** Elytra: length/width 1.96–2.06. Pronotum: length/width 1.03–1.08. Width head/width frons 2.33–2.40; width frons/width one eye 1.38–1.54.

**Coloration.** Upper side of head, pronotum, scutellum and pygidium dark brown (nearly black) in the mature holotype (in the more or less immature paratypes brown), pronotum either glabrous or slightly microreticulated; elytra brown in the frontal three fourth in the mature holotype, in the apical third apically more and more dark, in the paratypes according to degree of maturity the frontal three third of elytra are yellow and apically the elytra becoming darker; in one very immature specimen the elytra are uniformly yellow; elytra lustrous; legs light brown; antennae somewhat darker brown than legs. Under-side chestnut brown except the hind two abdominal segments which are dark brown, nearly black.

**Head.** Frons relatively narrow when compared with transverse diameter of eyes; with small, distinct punctures; there is no transverse impression between

frons and neck, but the neck presents somewhat larger and more widely separated punctures. Eyes large, roundedly prominent laterad. Temples not visible from above. Genae terminate posterior in the mid of frontal margin of eyes; genae are horizontally flat, their outer margins are somewhat sinuous, they roundedly pass over into the straight anterior margin of clypeus. Clypeus is situated on a slightly higher level than genae; clypeus is only slightly convex transversely, and the size of the punctures are as on frons; several setae are uprising from some clypeal punctures. On underside of head the eyes reach to the middle of base of maxillary palpes. Underside of neck with a few tiny punctures.

**Pronotum.** Slightly elongate, moderately convex transversely; sides subparallel and bordered. Front corners rounded. Anterior margin not bordered, roundedly protruding towards head. The lateral margins are somewhat narrowing caudad; hind corners allusively angular and obtuse. Hind margin bordered and within the middle half protruding towards elytra. Upper side with small, distinct, round, moderately separated punctures.

**Elytra.** Subcylindrical, elongate, sides parallel; longitudinally the upper side is straight. Basal margin nearly straight. Shoulders rounded. Apex truncate. Surface with small punctures which are not clearly aligned as distinct primary rows; punctures on intervals nearly as large as punctures of the indistinct primary rows and with somewhat more distance from each other; near apex the punctuation does not show a aligned tendency.

**Pygidium.** Half elliptic, with minute, closely set punctures. The basal margin of pygidium with short, closely set, yellow hairs.

**Prosternum.** Epipleura with small, relatively dense punctures. Area in front of process somewhat opaque, with a few minute punctures, from which some setae are rising upwards in males. Process between procoxae very narrow, somewhat triangularly widened behind procoxae and bent downwards (this part closely punctured).

**Mesoventrite.** Anterior part with large, dense punctures; posterior part between mesocoxae narrow, nearly impunctate and somewhat lifted ventrad.

**Metaventrite.** Regularly convex transversely, with a few tiny punctures; median line neither incised nor impressed.

Abdominal ventrites 1+2 with tiny, widely separated punctures; segments 3+4 with increasingly larger and denser punctures; last ventrite with large, very dense punctures.

**Legs.** Short. Tibiae narrow, slightly widened towards apex, outer side of pro- and mesotibiae straight and terminating in a sharp tooth apically; metatibiae apically rounded. Tarsal formula 4-4-4.



**Fig. 1.** Photograph of *Corticeus hauthi* spec. nov.: body length 2.1 mm.

**Etymology.** Dedicated to David Hauth, volunteer at the Zoologische Staatssammlung, Munich, who supported me in obtaining the material studied; he also made the photograph of this new species. The specific epithet is a substantive in the genitive case.

#### Other *Corticeus* species found in Peru

##### *Corticeus expeditus* Bremer, 1992

*Corticeus expeditus* Bremer, 1992: 180–182.

Tarsal formula 5-5-4.

**Material studied from Peru.** Peru, Dpt. Ayacucho, La Mar, Santa Rosa, 640 m, 19-25-IX-1976, Robert Gordon (1 USNM) – Peru, Madre de Dios; Río Tambopata Res., 30 air km SW Pt Maldonado, 290 m, 2.-5.XI.1979, J. B. Heppner, subtropical moist forest (2 USNM) – ditto, but 16.-20.XI.1979 (1 USNM) – Peru, Dept. Huánuco, Pan-

guana ACP, Río Yuyapichis, 9°37' S 74°56' W, blacklight trap, XII.2015, J. Monzón leg. (5 ZSM).

**Further material studied:** Paraguay, San Bernardino, K. Fiebrig (holotype in HMNH, 1 paratype in ZSM) – Venezuela, Carabobe, Mum. Bejuma, Canoabo River, 18.11.2005, F. Wachtel leg. (1 CG) – Venezuela, Carabobe, Mum. Bejuma, Via Palmichal C. M., XI.2005, F. Wachtel leg. (1 CG) – Costa Rica, F. Nevermann, in trockenem Holz, Hamburg Farm, Rentvazom, Limon Ebene (1 USNM) – Costa Rica, F. Nevermann, Salvadora Farm, Parismina, 5.-10.IX.1930, in trockenem Holz (2 USNM).

#### *Corticeus mexicanus* ssp. *argentinus* (Pic, 1915)

*Hypophloeus argentinus* Pic, 1915: 223.

*Corticeus mexicanus* ssp. *argentinus* (Pic, 1915); [comb. et stat. nov.]: Bremer & Triplehorn 1999: 58.

Tarsal formula 5–5–4.

**Material studied from Peru.** Peru, Panguana, X.2010, leg. F. Wachtel (2 CG).

**Further material studied:** Argentina, Río Paraná, Territorio de Misiones (holotype, female, in MNHN) – S.E. Brasil, Blumenau [26°56' S 49°03' W], Reitter (2 MNHN, 1 ZSM) – Brasil, São Paulo, J. Metz, Coll. Kraatz (1 DE).

**Annotation.** Concerning the status of *Corticeus argentinus* (Pic) as subspecies of *Corticeus mexicanus* Reitter and its delineation from the *Corticeus mexicanus* ssp. *mexicanus* Reitter, 1878, see Bremer & Triplehorn 1999.

#### *Corticeus notialis* Bremer & Triplehorn, 1999

*Corticeus notialis* Bremer & Triplehorn, 1999: 59–61.

Tarsal formula 5–5–4.

**Material studied from Peru.** Amazonas, Iquitos [Peru], M. De Mathan (1 paratype MNHN).

**Further material studied:** Brasil, Nova Teutonia, Santa Catarina, September, F. Plaumann (holotype in MCZC, paratypes in OSUC and ZSM) – Santa Catarina, Nova Teutonia, Brasil, 8.XII.1955 (1 paratype in MNHN).

#### *Corticeus plaumanni* Bremer, 1990

*Corticeus plaumanni* Bremer, 1990: 316–319.

Tarsal formula 4–4–4.

**Material studied from Peru.** Peru, Dept. Huánuco, Panguana ACP, Río Yuyapichis, 9°37' S 74°56' W, blacklight trap, XII.2015, J. Monzón leg. (1 ZSM).

**Further material studied:** Brasilia, Santa Catarina, Nova Teutonia, 14.8.1944, Plaumann leg. (holotype ZSM) – ditto, 3 paratypes in HMNH – ditto, but 5.8.1944 (paratype ZSM) – ditto, but VIII.1955, 300 m (1 paratype in MNHN).

**Annotation.** Head and pronotum brown; elytra light brown, antennae light brown, legs yellow. Measurements see “Differential diagnosis” of *C. hauthi* spec. nov.

#### *Corticeus rufipes* (Fabricius, 1801)

*Hypophloeus rufipes* Fabricius, 1801: 558.

*Corticeus rufipes* (Fabricius, 1801): Reitter 1878: 192 – Champion 1886: 171–172.

Tarsal formula 5–5–4.

**Material studied from Peru.** Peru, Dep. Huánuco, Río Lullapichis, Stat. Panguana, 233 m, 9°36.823' S 74°56.127' W, 20.IX.-7.X.13, leg. F. Wachtel (8 CG).

**Further material studied by the author or by R. Grimm:** Mexico, Chiapa, Agua Azul, 19-III-79, Col. D. Jump (2 USNM) – Mexico, Veracruz, 7 mi NW San Andreas, 8.VII.1963, leg. J. Doyen, under bark (2 ZSM) – Belize, B. Hond. (1 ZSM) – Nicaragua, Esteli, 10.I.93, leg. H. Bublér (1 ZSM) – Rep. Dominicaine, La Vega, Cibao, 16.IX.1973, J. Klapperich (1 ZSM) – Panama, Canal Zone, Barro Colorado Is., 2 June, 1977, Carpenter (1 USNM) – Panama, Chiriqui Grande, Bocas del Toro, Cilico Creek, 9.07° N 83.57° W, on fungi, 30.VII.2014, leg. T. Struyve, (1 CG) – Venezuela: Guarico, Hato Masaguaral (44 km S Calabozo), May 20–28 1985, Menke & Carpenter (1 USNM) – Venezuela, Aragua, Rancho Grande, July 5 1968, J. Malconado (1 USNM) – Venezuela, Carabobo, Mun. Bejuma, Canoabo River, 18.XI.2005, leg. F. Wachtel (1 CG) – Venezuela, Carabobo, Mun. Bejuma, Via Palmichal C. M., 10°16.58' N 68°15.16' W, 16.I.-5.II.2009, leg. F. Wachtel (1 CG) – Venezuela, Maracay, Coll. P. Vogt (2 ZSM) – Venezuela, Maracay, coll. P. Vogt (2 ZSM) – Venezuela (1 ZSM) – Brazil (3 ZSM) – Brazil, Blumenau, Fetting (1 ZSM) – Bolivia, Prov. Cochabamba, P. Germain 1889 (1 ZSM).

#### *Corticeus tuberculatus* Triplehorn, 1979

*Corticeus tuberculatus* Triplehorn, 1979: 48–50.

Tarsal formula 5–5–4.

**Material studied from Peru.** Peru, Dept. Huánuco, Panguana ACP, Río Yuyapichis, 9°37' S 74°56' W, blacklight trap, I.2016, J. Monzón leg. (2 ZSM) – Peru, Panguana, X.2010, F. Wachtel leg.; *Corticeus tuberculatus* Triplehorn, R. Grimm det. 2014 (1 CG) – The author of this paper compared all these specimens of this species from Peru with 3 paratypes of *Corticeus tuberculatus*



Triplehorn from Cuba (deposited in USNM). No difference was found between the specimens from Peru and the paratypes from Cuba.

**Further material studied:** Cayamas, Cuba, 14 January (no year indicated), E. A. Schwarz (holotype and 4 paratypes in USNM, 1 paratype in OSUC).

**Annotation.** This species would be better assigned as a new genus of Hypophlaeini.

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