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Angiochthebius subgen.n., a new subgenus of *Ochthebius* LEACH, 1815 from the southern Neotropical Region (Coleoptera: Hydraenidae)

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Abstract

A new subgenus of *Ochthebius* LEACH, 1815 (Coleoptera: Hydraenidae) is described: *Angiochthebius* subgen.n. (type species: *Gymnochthebius plesiotypus* PERKINS, 1980), which corresponds to the *Gymnochthebius plesiotypus* species group sensu PERKINS (1980). The new subgenus includes three species from Argentina and Chile: *Ochthebius* (*Angiochthebius*) *jensenhaarupi* KNISCH, 1924, *O.* (*A.*) *octonarius* (PERKINS, 1980) comb.n., and *O.* (*A.*) *plesiotypus* (PERKINS, 1980) comb.n. *Angiochthebius* can be distinguished from the subgenera *Gymnochthebius* ORCHYMONT, 1943 and *Gymnanthelius* PERKINS, 2004 mainly by the 5th abdominal ventrite, which is entirely pubescent, while it is totally or partly glabrous in *Gymnochthebius* and *Gymnanthelius.* The aedeagal median piece of *Angiochthebius* is bifid (in contrast to *Ochthebius* s.str. and *Gymnanthelius*). *Ochthebius* (*A.*) *octonarius* is recorded for the first time from Salta Province (Argentina); *O.* (*A.*) *plesiotypus* is recorded for the first time from Cordillera, Maipo and Malleco provinces (Chile).

Key words: Coleoptera, Hydraenidae, *Gymnanthelius*, *Gymnochthebius*, *Ochthebius*, new subgenus, new combinations, Neotropical Region, Chile, Argentina, new records.

Introduction

Gymnochthebius ORCHYMONT, 1943 was originally described as a subgenus of *Ochthebius* LEACH, 1815 (ORCHYMONT 1943) to place several American species described under *Ochthebius* that could not be placed in any of the described subgenera, which had been established mostly for Palaearctic species. The species of *Gymnochthebius* have a bifurcate aedeagal main piece, with the gonopore usually placed at the base of the bifurcation, while in *Ochthebius* s.str. the main piece is not bifurcate, and the gonopore is situated at the apex of the distal lobe (ORCHYMONT 1943, PERKINS 1980). PERKINS (1980) revised the New World species of *Gymnochthebius*, and recognised three species groups: (1) *G. plesiotypus* group, with three species; (2) *G. germaini* group, with 13 species; (3) *G. nitidus* group, with nine species. The *G. plesiotypus* group was noted to have some deviating morphological characters: among others, a short and wide endophallus (slender in all other species of *Gymnochthebius*), and the 5th abdominal ventrite being entirely covered with hygrophobic pubescence (totally or partly glabrous in all other species of *Gymnochthebius*).

In a molecular phylogeny of the tribe Ochthebiini, *Gymnochthebius plesiotypus* PERKINS, 1980 was recovered as sister to the Australian genus *Gymnanthelius* PERKINS, 2004, and both taxa were in turn sister to the other studied species of *Gymnochthebius* (including both Australian and Neotropical examples) (VILLASTRIGO et al. in press). This required either the synonymy of *Gymnanthelius* under *Gymnochthebius*, or the erection of a new taxon for the *G. plesiotypus* group of the same rank as *Gymnochthebius* and *Gymnanthelius*. In VILLASTRIGO et al. (in press) *Gymmochthebius* is considered a subgenus of *Ochthebius*, as originally intended by ORCHYMONT (1943), and in consequence we describe here a new subgenus for the *G. plesiotypus* group.

Fig. 1: Habitus of *Ochthebius* (*Angiochthebius*) *plesiotypus*, male, Chile (Malleco Province).

Material and methods

The habitus photograph of *Ochthebius* (*Angiochthebius*) *plesiotypus* was taken with a Nikon D4 tethered to a PC and controlled with Nikon Camera Control Pro. Resulting images were aligned and stacked with Zerene Stacker and then post-processed in Adobe Photoshop CS 4 and CS 5.

The DNA of two specimens (1 ♂, 1 ♀) of *Ochthebius* (*Angiochthebius*) *plesiotypus* from Chile (Malleco Province) was non-destructively extracted using a standard phenol-chloroform extraction; the DNA is stored in the DNA and tissue collection of the IBEB; the extracted specimens were mounted on a card (see VILLASTRIGO et al. in press for details on the extraction and sequencing methods). The specimens examined for this study are deposited in the following collections:

IBEB	Institute of Evolutionary Biology, Barcelona, Spain
MNCN	Museo Nacional de Ciencias Naturales, Madrid, Spain
NMW	Naturhistorisches Museum Wien, Vienna, Austria

Angiochthebius subgen.n.

Gymnochthebius plesiotypus group sensu PERKINS (1980).

TYPE SPECIES: *Gymnochthebius plesiotypus* PERKINS, 1980, by present designation. See Fig. 1 for habitus.

MATERIAL EXAMINED:

Ochthebius (*Angiochthebius*) *jensenhaarupi* KNISCH, 1924

ARGENTINA: Mendoza Province: Santa Rosa, 5.III.2002, leg. G. Flores, 1 ♂, 1 ♀ (NMW).

Ochthebius (*Angiochthebius*) *octonarius* (PERKINS, 1980)

ARGENTINA: Salta Province: ca. 3 km NW Campo Quijana, Río Toro, 24°53'39"S 65°40'08"W, ca. 1580 m, IX.2006, leg. M. Brojer, 1 ♀ (NMW).

Ochthebius (*Angiochthebius*) *plesiotypus* (PERKINS, 1980)

CHILE: Cordillera Province: Cajón del Maipo, El Manzano, 21.I.1999, leg. I. Ribera, 1 ♂, 1 ♀ (NMW); Maipo Province: Alto Cantillana, 8.I.2001, leg. M. Guerrero, 1 ♀ (IBEB); Malleco Province: Termas de Río Blanco, 8.II.2001, leg. M. Guerrero, 16 specimens (IBEB, MNCN, NMW) – two of these specimens were used for DNA extraction and sequencing, voucher numbers MNCN-AI502 and MNCN-AI562.

DIAGNOSIS: Length 2.00–2.50 mm, body colour generally black, sometimes with metallic lustre; appendages paler. Body shape more or less as in *Ochthebius* s.str. (somewhat resembling species of the *O. punctatus* group with regular elytral striae). Labrum anteriorly excised or emarginate. Lateral margin of pronotum straight or convex in anterior half, never concave; in posterior half usually not strongly retracted; pronotum more or less cordiform, lateral margins not distinctly angulate; pronotal foveae well developed or very small, median furrow well developed. Elytra elongately oval, with hardly or well impressed series of punctures; elytral intervals flat or convex; elytral gutter usually slightly more explanate in female than in male; elytral apex usually more acuminate in female than in male. Metaventrite and abdominal ventrites 1–5 totally covered with hygrophobic pubescence.

Aedeagal main piece symmetrical in ventral/dorsal view, with bifid apex. Endophallus wide and short (not reaching apex of main piece), with a large terminal opening. Parameres long and thin, slightly extending beyond apex of main piece, with a group of relatively long apical setae; inserted subbasally on ventral side of aedeagus.

Detailed descriptions of the three species of *Angiochthebius*, including illustrations of the male genitalia and a key to the species were provided by PERKINS (1980).

DIFFERENTIAL DIAGNOSIS: Externally, the main difference between *Angiochthebius* and *Gymnochthebius* is the fifth abdominal ventrite, which is partly or totally glabrous in *Gymnochthebius*, while it is totally pubescent in *Angiochthebius* (see also PERKINS 1980). In addition, the species of *Angiochthebius* differ from all New World species of *Gymnochthebius* in the entirely pubescent metaventrite (medially glabrous in the New World species of *Gymnochthebius*).

The shape of the pronotum of the species of *Angiochthebius* (see Fig. 1) seems to be less derived than in the species of *Gymnochthebius*. In *Angiochthebius* it is more or less simply cordiform (as in many species of *Ochthebius* s.str.) while in *Gymnochthebius* the lateral margin is usually emarginate in the anterior part and more strongly and more abruptly constricted posteriorly (see PERKINS 1980: figs. 80, 82–83, 86, 89, 93).

The aedeagus of *Angiochthebius* is symmetrical in ventral/dorsal view, while it is usually more or less asymmetrical (curved) in the New World species of *Gymnochthebius*. The endophallus is distinctly wider than in *Gymnochthebius*. The parameres are inserted medially in *Angiochthebius* (laterally in *Gymnochthebius*) (see PERKINS 1980: figs. 81–82, 84–86, 88, 91, 93).

Gymnanthelius, the putative sister of *Angiochthebius* according to the molecular phylogeny of VILLASTRIGO et al. (in press), differs from *Angiochthebius* in the habitus (see PERKINS 2004: figs. 2–9), glabrous abdominal ventrite 5, and in the wedge-shaped or rounded (not bifid) apex of the aedeagal main piece (see PERKINS 2004: figs. 10–17).

HABITAT: There is little information on the habitat of the species of *Angiochthebius*. They tend to be found in pools or calm areas of rivers (see also BALFOUR-BROWNE 1971, PERKINS 1980).

DISTRIBUTION: The new subgenus is restricted to the Andes of Argentina and Chile. So far they were found between 24º and 42º of southern latitude.

ETYMOLOGY: The name *Angiochthebius* means "covered *Ochthebius*". The first part of the name is derived from the Greek word ἀγγεῖον (angeîon), a prefix, or combining form, in numerous compounds, often relating to something being covered, e.g. Angiosperms. The name refers to the pubescence entirely covering the 5th ventrite, in contraposition to *Gymnochthebius* ("naked *Ochthebius*"), with reduced or without pubescence on the 5th ventrite. The gender of the name *Angiochthebius* is masculine.

Catalogue of the species of *Ochthebius* subgen. *Angiochthebius*

1. *Ochthebius* (*Angiochthebius*) *jensenhaarupi* KNISCH, 1924: 114.
   Ochthebius (*Hymenodes*) *Jensen-Haarupi* KNISCH 1924: 114.
   Ochthebius (*Gymnochthebius*) *Jensen-Haarupi* KNISCH, 1924; ORCHYMONT 1943: 41.
   Ochthebius (*Gymnochthebius*) *jensenhaarupi* KNISCH, 1924; BALFOUR-BROWNE 1971: 180.
   Gymnochthebius jensenhaarupi (KNISCH, 1924): PERKINS 1980: 253; HANSEN 1998: 120.

   Distribution: Argentina (Mendoza).

2. *Ochthebius* (*Angiochthebius*) *octonarius* (PERKINS, 1980: 254) **comb.n.**
   Gymnochthebius octonarius PERKINS 1980: 254; HANSEN 1998: 121.

   Distribution: Argentina (Salta, Tucumán). First record for Salta Province (see above for details).

3. *Ochthebius* (*Angiochthebius*) *plesiotypus* (PERKINS, 1980: 251) **comb.n.**
   Gymnochthebius plesiotypus PERKINS 1980: 251; HANSEN 1998: 121.

   Distribution: Argentina (Río Negro), Chile (Concepción, Cordillera, Maipo, Malleco). First records for Cordillera, Maipo, and Malleco provinces (see above for details).

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Buchbesprechung

(Fortsetzung von p. 16)

Auch für *Megasternum concinnum* und *M. immaculatum* gibt es keine Verbreitungskarte, weil die Verbreitung der beiden sehr ähnlichen Arten noch nicht hinreichend geklärt zu sein scheint. Ähnliches gilt für die drei Arten des *Hydrobius fuscipes* complex (*H. fuscipes*, *H. rottenbergii*, *H. subrotundus*). Sie werden im vorliegenden Werk gemeinsam unter dem Begriff „*Hydrobius fuscipes* sensu lato" in nur einer einzigen Verbreitungskarte abgehandelt. Diese drei Arten sind genetisch eindeutig verschieden aber morphologisch sehr ähnlich und bisher hat noch niemand das bereits gesammelte Material nachdeterminiert. Die Verbreitungskarte von *Hydrophilus piceus* (p. 141) zeigt einen bemerkenswert weit im Meer gelegenen, rezenten Fundpunkt; beim Nachlesen stellt sich rasch heraus, dass es sich dabei nicht um einen Druckfehler handelt, sondern um einen Fund auf einer Ölplattform in der Nordsee.

Bei vielen Arten findet sich auch ein farbiges Habitatfoto, manchmal sogar mehrere.

Innerhalb des besprochenen Atlas gibt es keine zusammenfassenden Angaben zur Gesamtzahl der im behandelten Gebiet nachgewiesenen Arten. Lediglich auf der hinteren Umschlagseite steht, dass in diesem Buch 104 Arten besprochen werden. Bei genauerer Überprüfung stimmt diese Zahl sogar, aber zwei dieser 104 Arten (*Cercyon castaneipennis*, *Sphaeridium substriatum*) werden nur am Rande erwähnt, wobei *Cercyon castaneipennis* nicht einmal in der Tabelle aufscheint, da die Art erst kurz vor der Drucklegung nachgewiesen werden konnte. Somit ergeben sich folgende Artenzahlen: Helophoridae (20), Georissidae (1), Hydrochidae (7), Spercheidae (1), Hydrophilidae (75). Die auf der hinteren Umschlagseite angegebene Anzahl der Verbreitungskarten stimmt aber tatsächlich nicht, denn es sind nur 97 Verbreitungskarten vorhanden, nicht 101. Leider findet sich diese fehlerhafte Angabe auch in allen überprüften Webseiten, in denen für diesen Atlas geworben wird, einschließlich der Verlagsseite (https://www.field-studies-council.org/publications/pubs/atlas-of-the-hydrophiloid-beetles-of-britain-and-ireland.aspx).

Auch die Anzahl der Seiten ist im Internet mit 306 durchwegs falsch angegeben (siehe z.B. https://www.nhbs.com/atlas-of-the-hydrophiloid-beetles-of-britain-and-ireland-book). Die Seite 306 ist bis auf die irrtümlich abgedruckte Kopfzeile (Namen der Autoren) und die Paginierung völlig leer und darf daher bei der Zitierung des Werkes nicht mitgezählt werden.

Auf Seite vii hat sich der Fehlerteufel etwas Besonderes einfallen lassen: In der Kopfzeile steht „THE LADYBIRDS (COCCINELLIDAE) OF BRITAIN AND IRELAND".

Abgesehen davon ist das Buch weitgehend fehlerfrei. Alle Artnamen sowie deren Autoren und Jahreszahlen sind richtig und auf dem letzten Stand. Auch das umfangreiche Literaturverzeichnis (pp. 268–302; ca. 600 Zitate) ist bis auf wenige Tippfehler (z.B. „Zeitschrift für Wissenschäfltiche Insektenbiologie"; „Tasar" schreibt sich „Taşar") vorbildlich zusammengestellt. Bei Balke et al. fehlen die Jahreszahl (2017) und die Heftnummer (1).

Insgesamt handelt es sich bei diesem Atlas um ein hervorragendes informatives Werk. Ich bin schon sehr gespannt auf den nächsten Band.

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