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A new subspecies of *Laccophilus newtoni* BRANCUCCI 1983 from the Philippines (Coleoptera; Dytiscidae: Laccophilinae)

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A b s t r a c t : *Laccophilus newtoni palawanensis* n.ssp. is described from the central part of the island of Palawan in the Philippines. The new subspecies can be easily distinguished from the nominate form *Laccophilus newtoni newtoni* BRANCUCCI 1983 (Sulawesi, Indonesia) by its smaller size, and by the brown markings of the elytra which are reduced basally and leave a broader testaceous band free. Additionally, the punctuation is more superficial, particularly on the elytra. The two subspecies and their distributions are briefly illustrated.

Key words : Coleoptera, Dytiscidae, *Laccophilus*, Philippines, Palawan, new subspecies.

Introduction

The subfamily Laccophilinae is represented by five genera in the Oriental and Australasian realms. The most speciose genera are *Laccophilus* LEACH, *Neptosternus* SHARP and *Philaccolilus* GUIGNOT, the latter being endemic to New Guinea (BALKE et al. 2000), while the other genera in the subfamily each contain only one or two species (NILSSON 2001). *Laccophilus* is undoubtedly one of the largest and most widespread genera of the family Dytiscidae, with 256 species worldwide, mainly distributed in the tropics (BALKE et al. 1997, NILSSON 2001, TOLEDO et al. 2003).

The Oriental and Australasian species have been revised by BRANCUCCI (1983b), with a total of 59 recognised species, classified in ten species-groups. More recently, additional papers have increased our knowledge of this genus in the Oriental region and New Guinea, with a total of 11 additional species and new data on the distribution and taxonomy of other taxa (ROCCHI 1986, GUEORGUIEV & ROCCHI 1992, BALKE & HENDRICH 1997, BALKE et al. 1997, HENDRICH & BALKE 1995, 1998; BALKE et al. 1998, TOLEDO et al. 2003).

In the present paper, a new subspecies of *Laccophilus newtoni* BRANCUCCI 1983, a species occurring on the island of Sulawesi in Indonesia, is described from central Palawan in the Philippines. The specimens were collected during an ecological survey of the aquatic macroinvertebrate communities of streams and rivers in Palawan by Dr. Hendrik Freitag (Dessau, Germany).

Material and Methods

Habitus drawings were made with a drawing tube attached to a Leitz MZ12. The style of the descriptive notes follows BRANCUCCI (1983).

Specimens mentioned in this work are deposited in several collections which are abbreviated in the text as follows:

CLH	Collection Dr. Lars Hendrich, Berlin, Germany
IMRL	Phyllodrom Museum and Institute for Rainforest Ecology, Leipzig, Germany
NMB	Naturhistorisches Museum Basel, Basel, Switzerland
NMW	Naturhistorisches Museum Wien, Austria
OLML	Oberösterreichische Landesmuseen Linz, Austria
UPLB	University of the Philippines, Los Bãnos, Museum of Natural History, Entomological Collection, Philippines

Taxonomy

Laccophilus newtoni newtoni BRANCUCCI 1983 (Figs 1, 3)

Laccophilus newtoni BRANCUCCI 1983: 340 (orig. descr.); Nilsson 2001: 247 (catalogue).

Material studied: Paratype, 1 ♂: "Tondano N Celebes IV-I-1932", "Van Braekel Collector", "F.C. Hedden Collection", "Paratypus", "*Laccophilus newtoni* n.sp. det. M. Brancucci 83" (NMB).

Laccophilus newtoni palawanensis n.ssp. (Figs 2, 4, 5)

Type locality: Cabayugan River, Central Palawan, Philippines.

Type material: Holotype ♂: "Philippines, Palawan, Cabayugan River, 25.05.2001, 10°09'.40 N, 118°53'.00 E, Puerto Princesa City Bgy. Cabayugan SO Manturon, H. Freitag leg." (NMW); 4 paratypes (2 ♂ and 2 ♀) with the same data as holotype (CLH, IMRL, NMB, UPLB) and 8 paratypes (4 ♂ and 4 ♀): "PHIL: Palawan, P. Princesa Cabayugan R/bgy, SO Manturon Drain channel of paddy fields 10°09'.40 N, 118°53'.00 E 16.V.2001 leg. FREITAG (5 D)" (CLH, NMW, OLML, UPLB) and 8 paratypes (4 and 4): "PHIL: Palawan, P. Princesa Cabayugan R/bgy, SO Manturon Drain channel of paddy fields 10°09'.40 N, 118°53'.00 E, 16.V.2001 leg. FREITAG (5 D)" (CLH, NMW, OLML, UPLB).

Diagnosis: Body elongate-oval. Head and pronotum testaceous, the latter brown medially along anterior and posterior border. Elytra testaceous with broad brown markings (Fig. 2).

Measurements: Holotype: TL: 3.00 mm; TL-h: 2.90 mm; TW: 1.65 mm; Paratypes: TL: 3.00-3.10 mm (3.02 mm, n = 4); TL-h: 2.85-2.90 mm (2.88 mm); TW= 1.63-1.65 mm (1.65 mm).

Description: Head completely testaceous. Reticulation double; the large one distinctly visible, the meshes polygonal, incomplete and superficial particularly on disc. The smaller reticulation distinctly impressed, somewhat more superficial on disc. Frons and clypeal grooves with a series of larger punctures. Antennae testaceous.

Pronotum testaceous, with a narrow band medially along anterior and posterior border; bands distinctly narrower than the testaceous space between them. Reticulation double; the larger distinctly visible, the meshes polygonal, incomplete particularly on disc.

Smaller reticulation superficial. Anterior and lateral margins as well as posterior angles with a series of larger punctures.

Elytra shining, testaceous with large brown markings consisting of a narrow basal band and a large median one, leaving a relatively broad testaceous band between them. Apical part irrorated on somewhat more than 1/3 of elytral length. Reticulation double; the larger one distinctly visible at base, becoming superficial behind; the meshes polygonal, partly open, with distinct punctures at their intersections. Small reticulation with minute, polygonal, almost rounded and strongly impressed meshes. Sutural row of punctures with some well-spaced punctures. Discal and sublateral rows complete, with numerous but not aligned punctures.

Underside completely brown except for head. Sternite testaceous-brown. Legs testaceous. Prosternal process narrow and very long. Posterior margin of metacoxal processes in a straight line; lateral knobs small but distinctly visible.

♂. Anal sternite tectiform, with only a few transverse wrinkles. Posterior margin slightly protruding medially, rounded laterally. First three pro- and mesotarsomeres slightly enlarged and with 4 rows of pads. Left paramere (in the sense of MILLER & NILSSON 2003) larger, rounded distally (Fig. 5b), right paramere narrow, rounded distally (Fig. 5a). Aedeagus, in lateral view, elongate, curved before the posterior 2/3 and narrowly rounded at apex (Fig. 4).

♀. Similar to ♂. Anal sternite tectiform, superficially wrinkled transversely. Posterior margin rounded.

E t y m o l o g y: Named after the island of Palawan, where this subspecies was discovered.

D i f f e r e n t i a l d i a g n o s i s: The new subspecies can be easily distinguished from the nominate form *L. newtoni newtoni* BRANCUCCI 1983, from Northern Sulawesi (Indonesia), by its smaller size (total length = 3.0-3.1 mm; 3.4-3.5 mm in *L. newtoni newtoni*), and by the brown markings of the elytra which are reduced basally and leave a broader testaceous band free. Furthermore, the testaceous middle part of the pronotum is much broader than the anterior or posterior brown bands (Figs 1 & 2). Finally, the puncturation is more superficial, particularly on the elytra.

H a b i t a t: All specimens were collected with a special Emergence Trap, in a paddy field drainage ditch flowing into the river Cabayugan (FREITAG 2004a, b).

D i s t r i b u t i o n: So far only known from the type locality on the island of Palawan (Fig. 6).

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We should like to thank Dr. Hendrik Freitag (Dessau) for the loan of this interesting material from Palawan. Our thanks go also to Adrian Pont (Oxford) for correcting the English of this manuscript. The illustrations were made by Armin Coray, and we thank him for his excellent work.

Zusammenfassung

In der vorliegenden Arbeit wird eine neue Unterart von *Laccophilus newtoni* BRANCUCCI 1983 von den Philippinen beschrieben, die im Rahmen eines umfassenden Forschungsprojekts über die

Makroinvertebratenfauna der Bäche und Flüsse Palawans entdeckt wurde. Während die Nominatform auf Sulawesi (Indonesien) vorkommt ist *Laccophilus newtoni palawanensis* sp.n. bisher nur von der Insel Palawan (Cabayugan Fluss) bekannt. Beide Formen unterscheiden sich klar in der Größe sowie der Färbung auf den Elytren und auf dem Pronotum.

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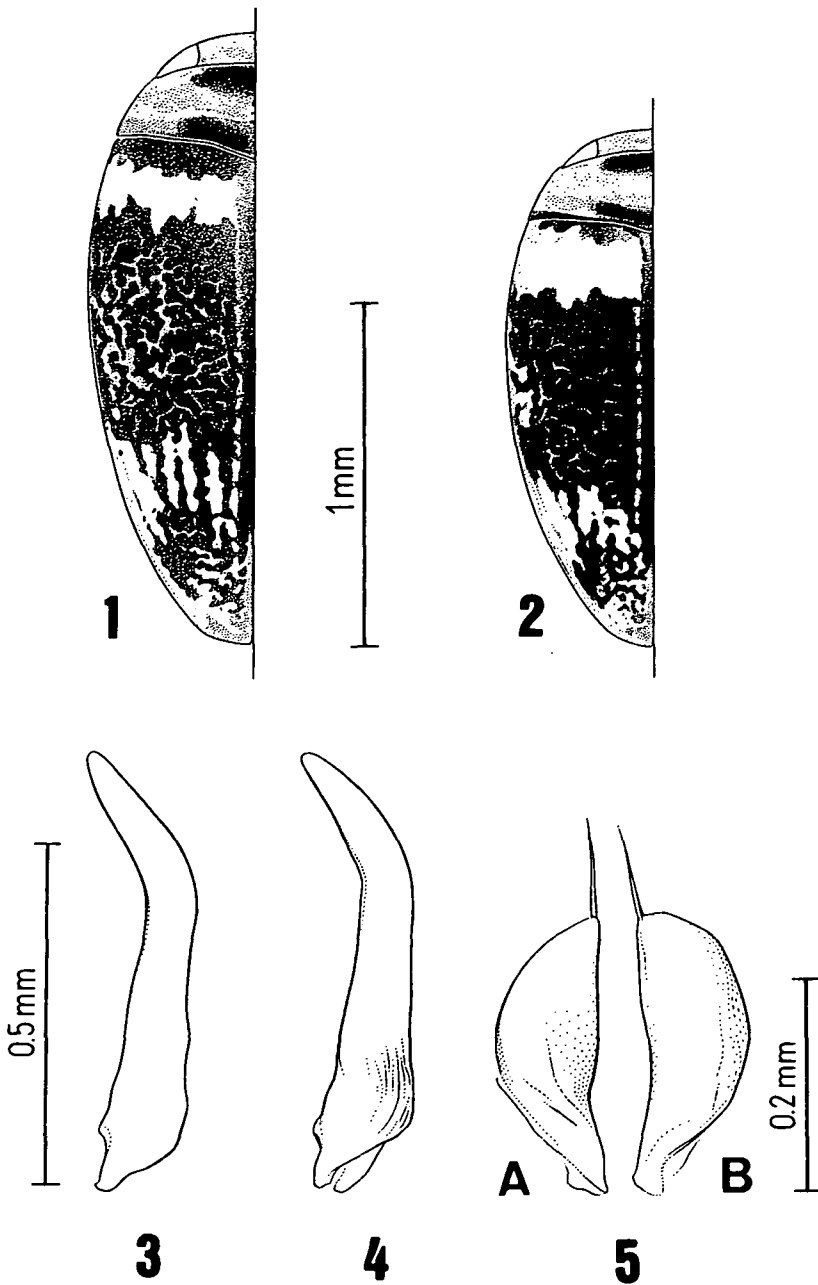
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Figs 1-2: Habitus: (1) *Laccophilus newtoni newtoni* BRANCUCCI 1983; (2), *Laccophilus newtoni palawanensis* n.ssp. **Figs 3-4:** Aedeagus in lateral view: (3) *Laccophilus newtoni newtoni*; (4) *Laccophilus newtoni palawanensis* n.ssp. **Fig 5:** Parameres in lateral view of *Laccophilus newtoni palawanensis*: a) Right paramere, b) Left paramere.

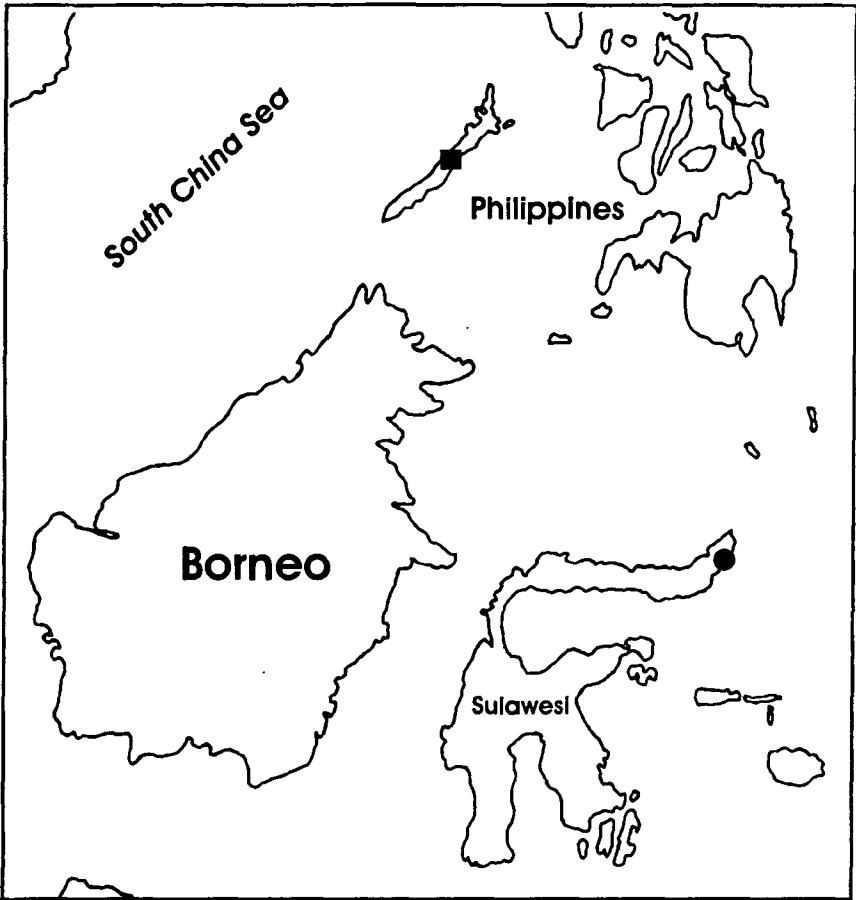


Fig. 6: Distribution of *L. newtoni newtoni* BRANCUCCI 1993 (dot) and *L. newtoni palawanensis* n.ssp. (square) in Southeast Asia.

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