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Two new *Laccophilus* species (Coleoptera: Dytiscidae) from Southeast Asia, and notes on other species of the genus

Michael Balke
Evolutionsbiologie, Institut für Zoologie, Freie Universität Berlin, Königin-Luise-Straße 1-3, D-14195 Berlin, Germany (e-mail <mbalke@zedat.fu-berlin.de>).

Paolo Mazzoldi
Via G. Galileo 87, I-25128 Brescia, Italy (e-mail <pmazzold@numerica.it>).

Lars Hendrich
Berlin Forschung, Freie Universität Berlin, Gärtnerstraße 3, D-12207 Berlin, Germany (e-mail <hendrich1@aol.com>).

ABSTRACT. - *Laccophilus chini*, new species [Peninsula Malaysia, S Vietnam, Sabah] and *L. mahakamensis*, new species [E Kalimantan] are described. We also provide new distributional records for *L. latipennis* Brancucci, 1983 and *L. vietnamensis* Balke & Hendrich, 1997. *Laccophilus chini* is a lentic species inhabiting forest pools and forested lakesides while *L. mahakamensis* is a lotic species occurring in primary forest streamlets.

KEYWORDS. - Coleoptera, Dytiscidae, *Laccophilus*, new species, faunistics, SE Asia.

INTRODUCTION

Oriental *Laccophilus* were revised by Brancucci (1983) who redescribed all the species then known and added several new ones. Subsequently, Balke & Hendrich (1997) added one new species from S Vietnam, and Hendrich & Balke (1995) recorded another species from Bali. Here, we describe two new species of SE Asian *Laccophilus,* one the known range of which is comparably wide and spans Peninsula Malaysia, S Vietnam and Sabah; and one which is currently only known from E Kalimantan, Indonesian Borneo.

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MATERIAL AND METHODS

The material studied is deposited in several collections which are abbreviated in the text as follows: CPM (coll. Paolo Mazzoldi, Brescia, Italy); CFP (coll. Fernando Pederzani, Ravenna, Italy); CSR (coll. Saverio Rocchi, Firenze, Italy); CMT (coll. Mario Toledo, Brescia. Italy); CANS (coll. Antonio Schizzerotto, Rovereto, Italy); CDB (coll. David Bilton, Plymouth, UK); CLH (coll. Lars Hendrich, Berlin, Germany); CMB (coll. Michael Balke, Berlin, Germany); NMW (Naturhistorisches Museum Wien, Austria); MHNP (Muséum National d'Histoire Naturelle, Paris, France); SMF (Senckenberg Museum, Frankfurt/ M., Germany); MSNM (Museo Civico di Storia Naturale, Milano, Italy); ZRC (Zoological Reference Collection, NUS, Singapore).

For the descriptions, the style used by Balke & Hendrich (1997) was adopted here.

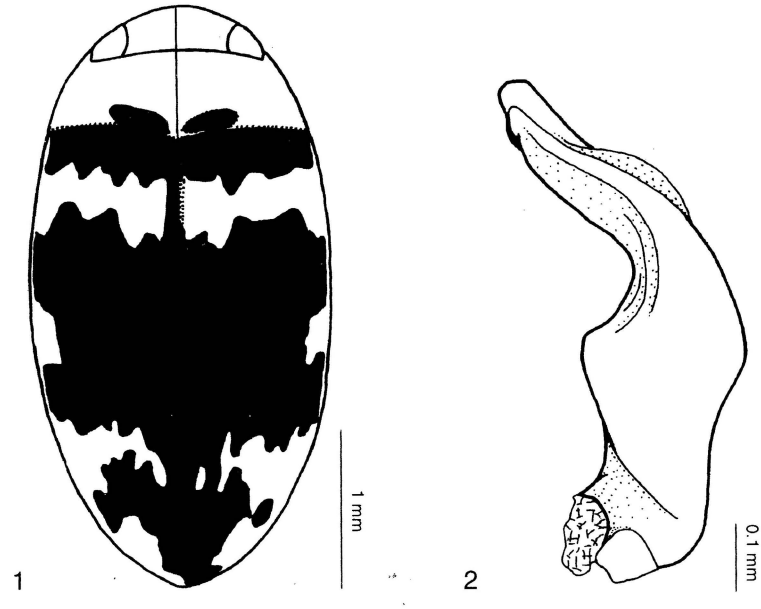
TAXONOMY

Laccophilus chini, new species

(Figs 1, 2, 6)

Material examined. - Holotype - male VIETNAM, 120 km north-northeast Ho Chi Minh City, environs Cat Tien village; coll. A. Napolov, 12-18 Jul.1995 (NMW).

Paratypes - 4 males 12 females same label data as holotype (CLH, CMB, CFP).— 5 inds, VIETNAM, Nam Cat Tien national park; coll. Pacholatko & Dembicky, 1-15 May.1994 (NMW).— 6 inds, MALAYSIA, Pahang, 40 km W Rompin, Selendang; coll. I. Jenis, 29 Apr.- 6 May.1993 (NMW).— 12 inds MALAYSIA, Pahang, Johor, Endau Rompin N.P., Salendang, 100 m; coll. M. Strba & R. Hergovits, 28 Feb.- 12 Mar.1995 (CLH, CMB, NMW).— 3 inds MALAYSIA, Pahang, Lake Chini; coll. P. Mazzoldi, 1 Jan.1996 (CPM).— 1 male MALAYSIA, Sabah, Sandakan, Kampong Bata Putih, Safoda; coll. H.K. Lua (#LHK 233), 9 Apr.1994 (ZRC).



Figs. 1-2. *Laccophilus chini,* new species. 1. habitus (left half Sabah specimen, right half S Vietnam individual). 2. median lobe (S Vietnam specimen).

Remarks. - The median lobe of this species was already figured by Brancucci (1983, Fig. 170) and referred to as „*L. siamensis* Sharp, cas tératologique". Further data are not available.

Description. - Measurements (N= 9). Length 3.20 - 3.60 mm (mean value = 3.39 mm, holotype 3.36 mm); Length without head 2.96 - 3.28 mm (mean value = 3.12 mm, holotype 3.00 mm); width 1.72 - 1.88 mm (mean value = 1.80 mm, holotype 1.72 mm).

Color (Fig. 1). Head, antennae and palpi yellow. Pronotum yellow, base slightly darkened; basally a black patch on each side of the middle. Elytra blackish with rather good delimited yellow pattern as depicted in Fig. 1. Venter and legs reddish.

Sculpture. Dorsal surface sculpture composed of irregular polygonal meshes and mircoreticulation which is moderately deeply impressed. Elytron with a discal, a lateral and a sutural row of larger serial punctures. Pronotum anteriorly with few larger punctures; dorsal surface otherwise with few smaller punctures only.

Male. Pro- and mesotarsomeres not dilated laterally. Median lobe of aedeagus highly characteristic, as depicted in Fig. 2. Margin of last visible sternite concave on both sides of the middle.

Etymology. - Named after Lake Chini, the mystery lake, where part of the type material was collected.

Distribution. - Southern Vietnam; Malaysia (Pahang, Sabah) (Fig. 6).

Affinities. - This species is rather similar to *Laccophilus siamensis siamensis* Sharp, 1882 (widespread in SE Asia) but its dorsal coloration is darker in most specimens. In doubtful cases, the male genital should be examined. *L. chini* is also very similar to *L. latipennis* Brancucci, 1983 which was so far only known from Laos. These two species cannot be separated from each other based on the coloration. However, *L. chini* can easily be separated from *L. latipennis* by the different form of the prosternal process which is lanceolate in *L. latipennis* but rather narrow and spiny in *L. chini*. Moreover, the male genitalia of the two species differ considerably (for median lobes of *L. siamensis* and *L. latipennis*, see Brancucci, 1983).

Habitat. - At Lake Chini, the new species was collected from the very shoreline of the lake. Beetles are hiding within the rather thick layer of fallen leaves. The species was associated with *L. siamensis* there, which was however more common. Other water beetles present were: *Notomicrus tenellus* (Clark, 1863) (Noteridae); Bidessini species, *Derovatellus orientalis* (Wehncke, 1883), *Hydaticus* sp., *Cybister dehaani* Aubé, 1838 (Dytiscidae); *Hydraena* sp. (Hydraenidae); *Hydrochus* sp. (Hydrochidae) and numerous species of Hydrophilidae.

We have no habitat information for the S Vietnam locality, but *L. siamensis* and *L. latipennis* were common there.

The Sabah individual was collected from leaf litter in medium flow murky water on the forest floor connected to a stream.

Laccophilus mahakamensis, new species
(Figs 3-6)

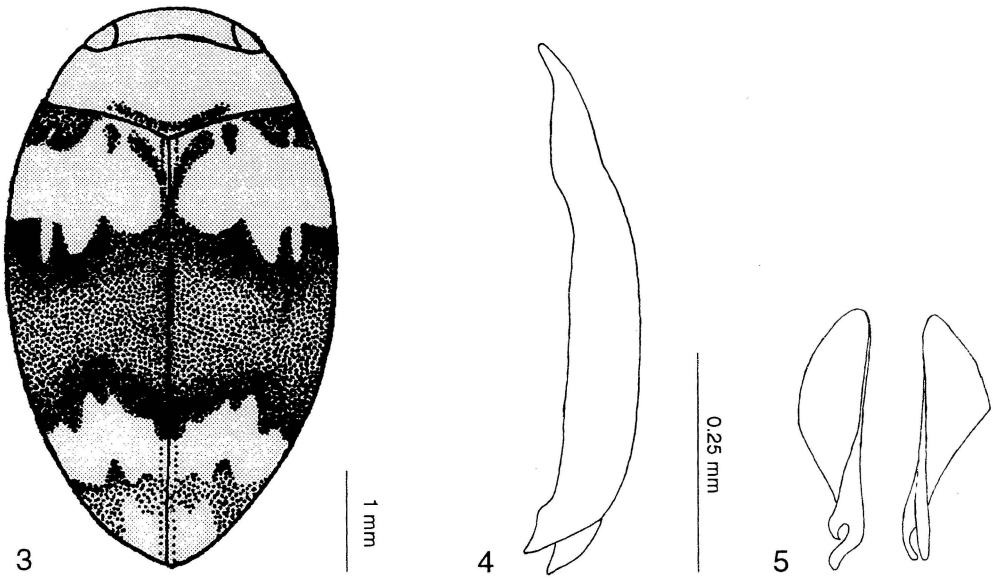
Material examined. - Holotype - male INDONESIA, East Kalimantan, district Barong Tongkok, Juhan Asa, Aput stream in primary forest; coll. P. Mazzoldi, 14 Jul.1995 (NMW).

Paratypes - 40 inds, same label data as holotype.— 33 inds, same locality as holotype; coll. P. Mazzoldi, 13 Jul.1997 (NMW, MHNP, SMF, MSNM, CFP, CSR, CMT, CANS, CDB, CLH, CMB, CPM).— 1 ind., INDONESIA, East Kalimantan, Distr. Barong Tongkok, Terajuk river between Eheng and Terajuk; coll. P. Mazzoldi, 14 Jul.1997 (CPM).— 23 inds, INDONESIA, East Kalimantan, Distr. Ujohbilang, very small stream in primary forest near Long Bangun, 150 m; coll. P. Mazzoldi, 17 Jul.1995 (CPM).— 1 ind., INDONESIA, East Kalimantan, ca. 200 km NW Samarinda, nr. Ritan Baru, small spring; coll. P. Mazzoldi, 30 Jul.1995 (NMW).

Description. - Small, rather broad species (length 3.4 - 3.7 mm, mean value 3.5 mm; width 2.0 - 2.2 mm, mean value 2.1 mm).

Color. Head, antennae and palpi yellowish. Pronotum yellowish, only weakly and indistinctly darkened along the central part of the posterior margin. Elytron light brown with yellowish markings (Fig. 3), subbasal transverse band in some specimens reaching the base of the pronotum medially. Elytral margin yellowish. Venter, including the epipleuron, yellow; legs yellow, hind legs slightly darker.

Sculpture. Head with reticulation weakly impressed. Surface of pronotum covered by a reticulation of large polygonal meshes with minute punctures at the intersections of the meshes; bigger punctures are present in a transverse band along the anterior margin, while along the posterior margin there are only two lateral groups of large punctures. Surface of elytron covered by a reticulation of large polygonal meshes, weakly impressed, generally with 1 - 2 minute punctures inside them. Traces of a second reticulation formed by much smaller meshes can be observed at very high magnification (90x), especially in the posterior part of the elytra. Sutural row of punctures absent, discal row distinct with punctures rather scattered, especially in the posterior part of the elytra.



Figs. 3-5. *Laccophilus mahakamensis,* new species. 3. habitus. 4. median lobe. 5. parameres.

Male. Pro- and mesotarsomeres 1-3 only weakly dilated. Median lobe of aedeagus as in Fig. 4, parameres as in Fig. 5. Margin of last visible sternite broadly rounded.

Etymology. - Named after the Mahakam river basin.

Distribution. - Indonesia (Kalimantan). The species was collected in three localities, two very close to each other, the third rather distant, but all in the basin of the Mahakam river (see Fig. 6); we hypothesize therefore that it is endemic to the above mentioned area.

Affinities. - Because of the simple elytral reticulation, formed by large polygonal meshes, the species clearly belongs to the group of *L. javanicus* Régimbart as defined by Brancucci (1983), but is easily separated from the other species of this group thanks to a combination of size, elytral marking and shape of aedeagus. In particular, it is the smallest species of the *javanicus* group together with the other Bornean species of the group, *L. girardi* Brancucci from northern Borneo. It can be easily distinguished from the latter species by the elytral marking and the shape of the aedeagus, which are distinctly different (see Fig. 4; and Fig. 135 in Brancucci, 1983). Another species with which *L. mahakamensis* might be confused is *L. elegans* Sharp from southern India, but in the latter species (which is slightly larger, 3.7 - 3.9 mm vs. 3.4 - 3.7 mm in *L. mahakamensis*) the elytral bands are much darker, pitch brown almost black, the shape of the body is more elongate and the aedeagus is different (see Fig. 136 in Brancucci, 1983). All the other species of the group are out of the question since they are distinctly larger in size and have different elytral markings and/ or aedeagi.

Habitat. - In the first locality and in the third one, the species was collected in identical environments, i.e. very small streams, with gravelly bottoms, issuing from springs, in uppermost reaches immediately after the spring, in completely shaded situations of primary rainforest. In the first locality (Aput stream near Juhan Asa) the species was collected together with *Microdytes elgae* Hendrich, Balke & Wewalka, 1995 (determined by G. Wewalka, Vienna) while in the third one (near Long Bangun), a stream originating from a very small spring, it was the only beetle present. The second locality is slightly different, because it is a bigger stream in secondary forest, only one specimen was collected.

Laccophilus latipennis Brancucci, 1983

Laccophilus latipennis Brancucci, 1983: 294 (orig. descr.).

Material examined - 12 inds, VIETNAM, 120 km NNO Ho Chi Minh City env. Cat Tien; coll. A Napolov, 12-18 Jul.1995 (CLH, CMB); 54 inds, VIETNAM, Nam Cat Tien N.P.; coll. Pacholatko & Dembicky, 1-15 May.1994 (NMW).

Remarks. - This species was described based on a single male individual from Laos. This is the first report for Vietnam (Fig. 6).

Laccophilus siamensis siamensis Sharp, 1882
(Fig. 6)

Laccophilus siamensis siamensis Sharp, 1882: 306 (orig. descr.); Brancucci, 1983: 299 (tax. rev.).

Distribution. - Vietnam, Laos, Cambodia, Myanmar, Thailand, Malaysia (Peninsula Malaysia), Indonesia (Sumatra, Java, Kalimantan), (Brancucci, 1983) (Fig. 6).

Laccophilus vietnamensis Balke & Hendrich, 1997

Laccophilus vietnamensis Balke & Hendrich, 1997: 99-100 (orig. descr.).

Material examined. - 1 ind., LAOS, Prov. Viangchan, Phou Khao Khouay NP env. Tad Leuk Waterfall, 200 m; coll. Schillhammer, 1-8 Jun.1996 (NMW).

Distribution. - Southern Vietnam (Balke & Hendrich, 1997). This is the first record for Laos.

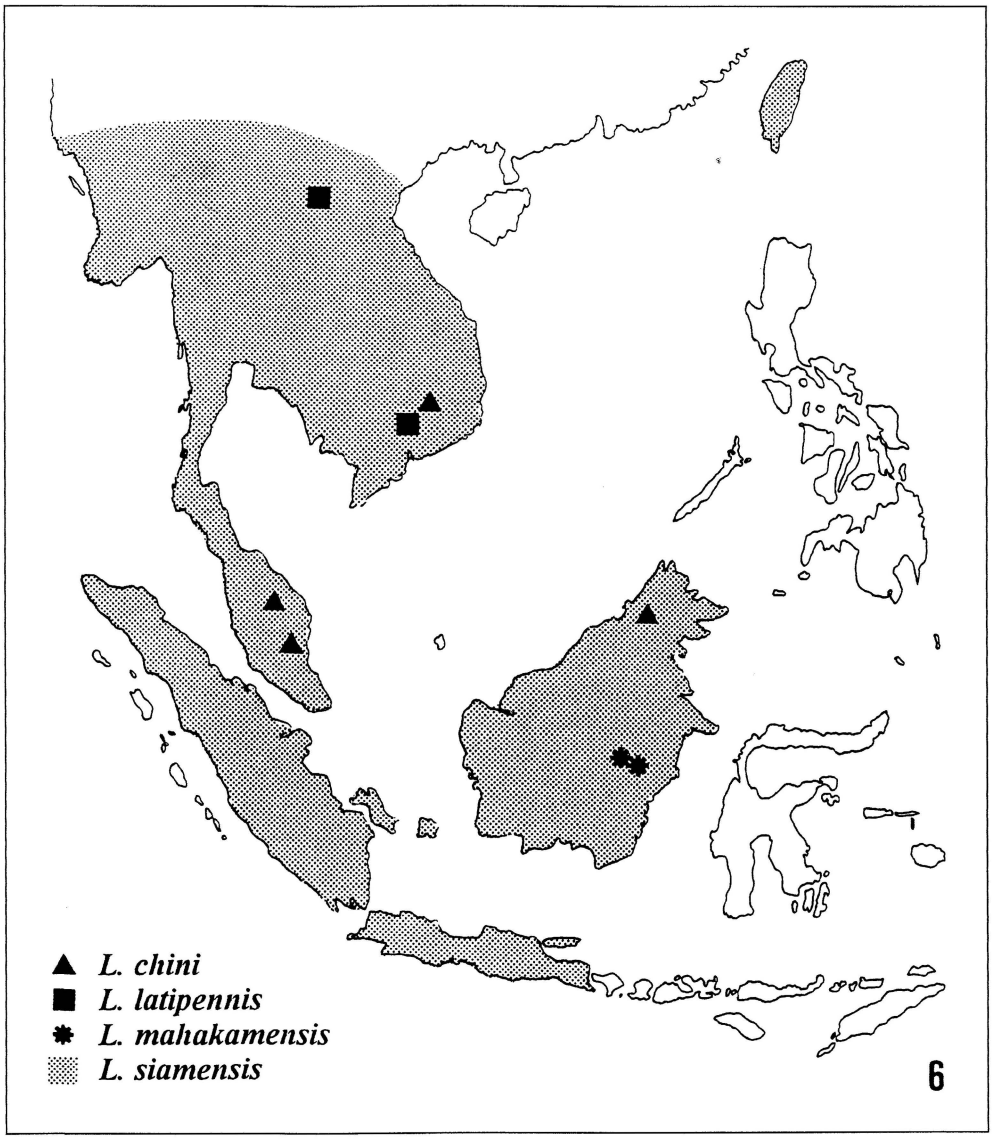


Fig. 6. Distribution of *Laccophilus* spp.: new records presented here and data taken from Brancucci, 1983.

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