Neptosternus arnecornelii sp. n. from Borneo and notes on other species of the genus (Coleoptera: Dytiscidae)

L. HENDRICH & M. BALKE

Abstract: Neptosternus arnecornelii sp. n. is described from West Kalimantan, the Indonesian part of Borneo. The new species is similar to N. biltoni HENDRICH & BALKE 1997 from Sulawesi but differs by its distinct coloration and the form of the median lobe. The species is rheobiont, and here we provide data on its habitat. Neptosternus brevior REGIMBART 1899 [Sumatra] and N. corporaali ZIMMERMANN 1924 [Sumatra] are reported for the first time for Borneo and additional records for N. bimaculatus HENDRICH & BALKE 1997, N. borneensis HENDRICH & BALKE 1997, N. jani HENDRICH & BALKE 1997, N. kalimantanensis HENDRICH & BALKE 1997, N. kodadai HENDRICH & BALKE 1997 and N. quadrimaculatus HENDRICH & BALKE 1997 are given. Twenty-two species of the genus occur in Borneo, 19 of them being endemic to that island.

Key words: Coleoptera, Dytiscidae, Neptosternus, new species, Borneo, Kalimantan.

Introduction

The genus Neptosternus SHARP 1882 is confined to the Afrotropical and Oriental regions. It currently includes 92 species (HENDRICH & BALKE 2001). Southeast Asian representatives were most recently revised by HENDRICH & BALKE (1997). The fauna of that region has been updated several times since (BALKE et al. 1997; BALKE & HENDRICH 1998 & 2001; HENDRICH & BALKE 2000; HENDRICH & BALKE 2001; HENDRICH & BALKE, this volume). A total of 61 species are now known from SE Asia.

The first keys to the Indian and Sri Lankan Neptosternus species were published by VAZIRANI (1963 & 1968). Additional species were described by WEWALKA (1973), VAZIRANI (1975), HOLMEN & VAZIRANI (1992) and HENDRICH & BALKE (1999). The latter paper summarized the knowledge on and provided a revised key to the Indian fauna. Nevertheless, the Indian species of the genus are in need of a comprehensive revision and many species especially in tropical Southern India are still unnamed.

The present paper is based on the material collected during three field trips in 1999 and 2000 by the Italian entomologist Paolo Mazzoldi to the Indonesian province of Kalimantan on the island of Borneo. The object of this paper is to describe a new species and to give some notes on the habitat of the species. Together with the species described herein, 22 species of Neptosternus are now known from Borneo. All but three (N. brevior REGIMBART 1899, N. corporaali ZIMMERMANN 1924 and N. riedeli HENDRICH & BALKE...
1997) are endemic to the island. Altogether 77 Dytiscidae are now reported from Borneo (BALKE et al. 2002).

Material and Methods

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

CBH.............. Collection Michael Balke and Lars Hendrich, Berlin, Germany
CPM .............. Collection Paolo Mazzoldi, Brescia, Italy
IMRL.............. Phyllodrom, Institut und Museum für Regenwaldökologie, Leipzig, Germany
NMW.............. Naturhistorisches Museum Wien, Vienna, Austria
OLML.............. Biologiezentrum/Oberösterreichisches Landesmuseum, Linz, Austria

The median lobe was traced from a SEM. The style of the descriptive notes follows HENDRICH & BALKE (1997), BALKE & HENDRICH (1998 & 2001) and HENDRICH & BALKE (2001).

Taxonomy and Faunistics

The genus Neptosternus SHARP is characterized by two apomorphies: prosternal process trifid (plesiomorphic character state: simple, with only one tip); posterior angles of pronotum greatly produced backwards, needle shaped and acute (plesiomorphic character state: not produced backwards, rounded).

The following species are distributed in Borneo:

| Neptosternus arneecornellii sp. n. | Kalimantan |
| Neptosternus aterrimus HENDRICH & BALKE 1997 | Kalimantan |
| Neptosternus bimaculatus HENDRICH & BALKE 1997 | Sabah, Sarawak, Kalimantan |
| Neptosternus borneensis HENDRICH & BALKE 1997 | Sabah, Sarawak, Kalimantan |
| Neptosternus brevior REGIMBART 1899 | Indonesia: Sumatra, Kalimantan |
| Neptosternus corporaali ZIMMERMANN 1924 | Indonesia: Sumatra, Kalimantan |
| Neptosternus jaechi HENDRICH & BALKE 1997 | Sarawak |
| Neptosternus jani HENDRICH & BALKE 1997 | Sabah, Kalimantan |
| Neptosternus kalimantanensis HENDRICH & BALKE 1997 | Sabah, Kalimantan |
| Neptosternus kodadai HENDRICH & BALKE 1997 | Sabah, Sarawak, Kalimantan |
| Neptosternus mazzoldii HENDRICH & BALKE 1997 | Kalimantan |
| Neptosternus minimus HENDRICH & BALKE 1997 | Sarawak |
| Neptosternus muluensis HENDRICH & BALKE 1997 | Sarawak |
| Neptosternus neisiorum HENDRICH & BALKE, 1997 | Sabah |
| Neptosternus nigritus HENDRICH & BALKE 1997 | Kalimantan |
Neptosternus noteroides HENDRICH & BALKE 1997
Neptosternus pseudocorporalis HENDRICH & BALKE 1997
Neptosternus riedeli HENDRICH & BALKE 1997
Neptosternus quadrimaculatus HENDRICH & BALKE 1997
Neptosternus sabahensis HENDRICH & BALKE 1997
Neptosternus sarawakensis HENDRICH & BALKE 1997
Neptosternus thiambooni BALKE, HENDRICH & YANG 1997

Neptosternus arnecornelii sp. n.

Holotype: ♂: "INDONESIA W Kalimantan Tanjung Lokan, Sungai Deren, 200 m, small tributary of Bungan in second. forest on gravel ground, 27.VII.2000, P. Mazzoldi leg." (NMW).
Paratypes: 70 specimens, same data as holotype (CBH, CPM, IMRL, NMW, OLML); 1 ex.: "INDONESIA, Kalimantan, Road Haratai-Loksado, big mountain stream in second. forest, 30.XII.2000, P. Mazzoldi leg." (CPM).

Etymology: Named for the late Arne Cornelius (Saarbrücken, Germany).

Description: Measurements (N = 20). Total length of beetle 2,63-2,70 mm (holotype 2,70 mm); length without head 2,39-2,41 mm (holotype 2,40 mm); greatest width of beetle 1,43-1,45 mm (holotype 1,45 mm).

Diagnosis: Small, broadly ovate species; body strongly flattened in lateral view.

Colour: Upper side comparatively light; head ferrugineous; pronotum dark anteriorly and posteriorly, ferrugineous medially; elytron black with two small and two bright yellow patches (Fig. 1). Venter yellowish to castaneous brown, epipleuron ferrugineous anteriorly; appendages yellowish to ferrugineous.

Sculpture: Head covered with polygonal meshes, medially densely punctate. Pronotum densely punctate, some larger punctures visible basomedially; with microreticulation of polygonal meshes along anterior margin and laterally. Elytron with microreticulation consisting of slightly transversely oriented polygonal meshes; fine and densely punctate; some large punctures visible discally between the suture and the discal row of serial punctures. A discal row of small serial punctures visible and almost forming a shallow stria; 1st and 2nd lateral rows less distinct, sutural row not present.

Male: Median lobe of aedeagus as in Fig. 2.

Affinities: Neptosternus arnecornelii superficially resembles S. biltoni HENDRICH & BALKE 1997 from the Togian Islands NE of Sulawesi. However the latter species is larger and more elongate. Furthermore the form of the median lobe is more elongate in N. arnecornelii whilst it is rather bulbiform in N. biltoni (see HENDRICH & BALKE 1997).

Distribution: West Kalimantan, Indonesia. Only known from the type locality.

Habitat: Neptosternus arnecornelii was obtained from a large rocky mountain stream partly shaded by second growth forest. Most specimens were collected among floating mats of fine tree roots and plant deposits from a shaded and steep undercut bank. The bottom consisted of sand and few larger stones (Mazzoldi in litt.).
Neptosternus bimaculatus HENDRICH & BALKE 1997

Material examined: 3 ex.: "Indonesia: E Kalimantan Sungai Mentarang, upstream from Paking, 4.8.1999, leg. Mazzoldi" (CBH, CPM).
This is the first record for Kalimantan.

Neptosternus borneensis HENDRICH & BALKE 1997

Material examined: 2 ex.: "Indonesia: E Kalimantan Sungai Mentarang, upstream from Kampung Paking, 2.8.1999, leg. Mazzoldi" (CPM).
This is the first record for Kalimantan.

Neptosternus brevior RÉGIMBART 1899

This is the first record for Borneo.

Neptosternus corporaali ZIMMERMANN 1924

Material examined: 3 ex.: "Indonesia: E Kalimantan Sungai Mentarang, upstream from Paking, 4.8.1999, leg. Mazzoldi" (CBH, CPM); 12 ex.: "Indonesia: E Kalimantan Sungai Mentarang, upstream from Kampung Paking, 2.8.1999, leg. Mazzoldi" (CBH, CPM).
This is the first record for Borneo.

Neptosternus jani HENDRICH & BALKE 1997

Previously only known from Sabah. This is the first record for Kalimantan.

Neptosternus kalimantanenis HENDRICH & BALKE 1997

Only known from the type material. This is the first additional locality.

Neptosternus kodadai HENDRICH & BALKE 1997

Material examined: 5 ex.: "Indonesia: E Kalimantan Sungai Mentarang, upstream from Kampung Paking, 2.8.1999, leg. Mazzoldi" (CPM); 1 ex.: "Indonesia: E Kalimantan Sungai Mentarang, upstream from Paking, 4.8.1999, leg. Mazzoldi" (CPM).
This is the first record for Kalimantan.
**Neptosternus quadrimaculatus** HENDRICH & BALKE 1997

Material examined: 35 ex.: "Indonesia: E Kalimantan, small tributary of Sungai Mentarang, upstream from Pulau Sapi (hydr. right), 3.8.1999, leg. Mazzoldi" (CPM).

This is the first record for Kalimantan.

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**Zusammenfassung**


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Fig. 1-2: 1 – Habitus and coloration of *Neptosternus arnecornelii* sp. n. 2 – *Neptosternus arnecornelii* sp. n., median lobe of aedeagus in ventral view. Scale: 0.1 mm.
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