

Three new species of *Microdytes* BALFOUR-BROWNE from Laos and Borneo (Coleoptera: Dytiscidae)

G. WEWALKA & L.-J. WANG

Abstract

Three new species of *Microdytes* BALFOUR-BROWNE (Coleoptera: Dytiscidae) are described: *M. franzi* sp.n. [Laos], *M. holzmanni* sp.n. [Laos] and *M. mazzoldii* sp.n. [Borneo].

Key words: Coleoptera, Dytiscidae, Hyphyrini, *Microdytes*, new species, taxonomy.

Introduction

The genus *Microdytes* BALFOUR-BROWNE (Coleoptera: Dytiscidae) was recently revised by WEWALKA (1997) who recorded 30 species.

The junior author discovered two new species of *Microdytes* in the collection of the Bishop Museum, Hawaii. Specimens of one of the new species which are described below were also collected by Katsumi Akita, Hisai City, Japan. The third species was collected by Paolo Mazzoldi, Brescia, Italy.

Material

The study material consists of about 45 specimens which are deposited in the following institutions and private collections.

BMH Bishop Museum, Honolulu, Hawaii, USA
CAH Coll. Akita, Hisai City, Japan
CBB Coll. Balke, Berlin, Germany
CBP Coll. Bilton, Plymouth, UK
CHB Coll. Hendrich, Berlin, Germany
CMB Coll. Mazzoldi, Brescia, Italy
CNU Coll. Nilsson, Umeå, Sweden
CSN Coll. M. Satô, Nagoya, Japan
CWT Coll. Wang, Taipei, Taiwan
CWW Coll. Wewalka, Vienna, Austria
FMNH Finnish Museum of Natural History, Helsingfors
NMW Naturhistorisches Museum, Vienna, Austria
NSMT National Science Museum, Tokyo, Japan

Microdytes franzi sp.n.

Type locality: Laos, Prov. Vientiane, Phou Khao Khouay.

Holotype ♂ (NSMT): "Mt. Phukhaokhova [Phou Khao Khouay]/ 700 m, Thupakhom dist. [Vientiane Province] / Lao 2-3.V.1995 / Katsumi AKITA leg."; **Paratypes**: 19 specimens with same data as the holotype (CAH, CBB, CHB, CMB, CNU, CSN, CWW, FMNH, NMW); 13 specimens, Laos: Ban Van Heue, 20 km E of Phou Khao Khouay, 1.-15. V.1965, leg. J.A. Rondon (BMH, CWT, CWW).

DIAGNOSIS: According to the key published by WEWALKA (1997) *M. franzi* resembles *M. zetteli* WEWALKA but can be distinguished by the smaller size, the stronger punctures of the elytra and the male genitalia. *Microdytes franzi* is also closely related to *M. akitai* WEWALKA but this species has a testaceous pronotum.

DESCRIPTION: Habitus (fig. 1): body regularly oval, moderately convex.

Length of body: 1.4 - 1.6 mm, width: 1.0 - 1.1 mm.

Head: dark-ferruginous; clypeus not bordered; moderately strongly and very sparsely and irregularly punctured, more strongly on the vertex, a row of coarser punctures alongside the eyes; anterior half finely microreticulate. Antennae flavo-testaceous, moderately long and slender (similar to that of *M. akitai* or *M. zetteli*).

Pronotum: dark-ferruginous, indistinctly rufo-testaceous along the lateral margins; lateral margin finely bordered, lateral sides regularly rounded; punctures moderately irregular, moderately strong and sparse, coarsely punctured along the posterior margin; without microreticulation.

Elytra: ferruginous, at the base with a distinct testaceous transverse band which is waved posteriorly, not reaching the suture, dilated at the shoulder and continuing along the lateral margin almost to the apex forming a triangular spot, with a small post-median comma-shaped testaceous band and an oblong-oval post-median testaceous spot near the suture (fig. 1); punctures fairly fine and regular, moderately dense, more fine and sparse towards the lateral sides; a longitudinal row of rudimental punctures; highly polished and shining; without microreticulation.

Ventral side: head testaceous, epipleura and the rest of the ventral side ferruginous; punctures on metacoxae fine to moderately strong but very sparse and irregular, metasternum and abdomen almost without punctures; without microreticulation.

Legs testaceous.

Male: penis (fig. 2); parameres (fig. 3); without secondary sexual characters.

Female: spermatheca (fig. 4).

ETYMOLOGY: This species is dedicated to Prof. DI DDr. h.c. H. Franz, Mödling.

BIOLOGY: This species was collected in a small pit hole at a dried up mountain stream together with specimens of *M. akitai*.

DISTRIBUTION: Laos.

Microdytes holzmanni sp.n.

Type locality: Laos, Prov. Vientiane, Ban Van Heue, E of Phou Khao Khouay.

Holotype ♂ (BMH): "Laos: Ban Van Heue / 20 km E of Phou-kow- / kuei [Phou Khao Khouay], 1.-15. V.1965 / J.A. Rondon Collection / BISHOP Mus."; **Paratypes:** 1 ♂, 1 ♀, with same data as the holotype (BMH, CWW).

DIAGNOSIS: *M. holzmanni* resembles *M. akitai* and *M. shunichi* SATO in the habitus, the size, the elytral markings and the punctures on the dorsal surface. The key given in the revision of *Microdytes* (WEWALKA 1997) leads to these species. *M. holzmanni* can be separated from both species by the very fine punctures on the abdomen and the male genitalia. From *M. akitai* *M. holzmanni* can also be distinguished by the darker ventral side including the epipleura. *M. holzmanni* is also closely related to *M. zetteli* and *M. franzi* sp.n. but these species have the pronotum ferruginous.

DESCRIPTION: Habitus (fig. 5): body regularly oval, moderately convex.

Length of body: 1.6 - 1.7 mm, width: 1.1 - 1.2 mm.

Head: dark rufo-testaceous to ferrugineous; clypeus not bordered; very finely and very sparsely and irregularly punctured, a row of coarser punctures alongside the eyes; anterior half finely microreticulate. Antennae flavo-testaceous, moderately long and slender (similar to that of *M. akitai* or *M. zetteli*).

Pronotum: rufo-testaceous, indistinctly ferrugineous along the posterior and the anterior margins; lateral margin very finely bordered, lateral sides regularly rounded; punctures moderately irregular, very fine and sparse, coarsely punctured along the posterior and the anterior margin; without microreticulation.

Elytra: ferrugineous, at the base with a more or less distinct testaceous transverse band, not reaching the suture, dilated at the shoulder and continuing along the lateral margin almost to the apex forming a triangular spot, with a small post-median testaceous band and a oblong-oval post-median testaceous spot near the suture (fig. 5); punctures fine, regular and sparse, more fine and sparse towards the lateral sides; two longitudinal rows of punctures fairly distinct; highly polished and shining; without microreticulation.

Ventral side: head and prothorax testaceous, epipleura and the rest of the ventral side ferrugineous; punctures on the metasternum and the metacoxae very fine and sparse and irregular; punctures on the abdomen present but very fine and sparse; without microreticulation.

Legs testaceous.

Male: penis (fig. 6); parameres (fig. 7); without secondary sexual characters.

Female: sclerotized spermatheca not found.

ETYMOLOGY: The species is dedicated to our friends Chantale and Prof. Dr. Robert Holzmann, Washington D.C.

BIOLOGY: unknown.

DISTRIBUTION: Laos.

Microdytes mazzoldii sp.n.

Type locality: Indonesia, Borneo, E Kalimantan, Apokayan, Sungai Barang.

Holotype ♂ (NMW): "Indonesia, E Kalimantan / Apokayan, Sungai Barang / Lalut Boq, 870 m, 3.1.1998 / leg. P. Mazzoldi"; Paratypes: 2 ♂♂, 2 ♀♀, with same data as the holotype (CMB, CWW); 2 ♀♀, Indonesia, E Kalimantan, distr. Tabang, near Ritan Baru, small spring, 30.VII.1995, leg. P. Mazzoldi (CMB).

DIAGNOSIS: *M. mazzoldii* resembles *M. pasiricus* (CSIKI) and *M. menopausis* WEWALKA in the habitus and the punctures on the ventral side but is distinguishable by the smaller size, the concoloured ferrugineous elytra and the male genitalia.

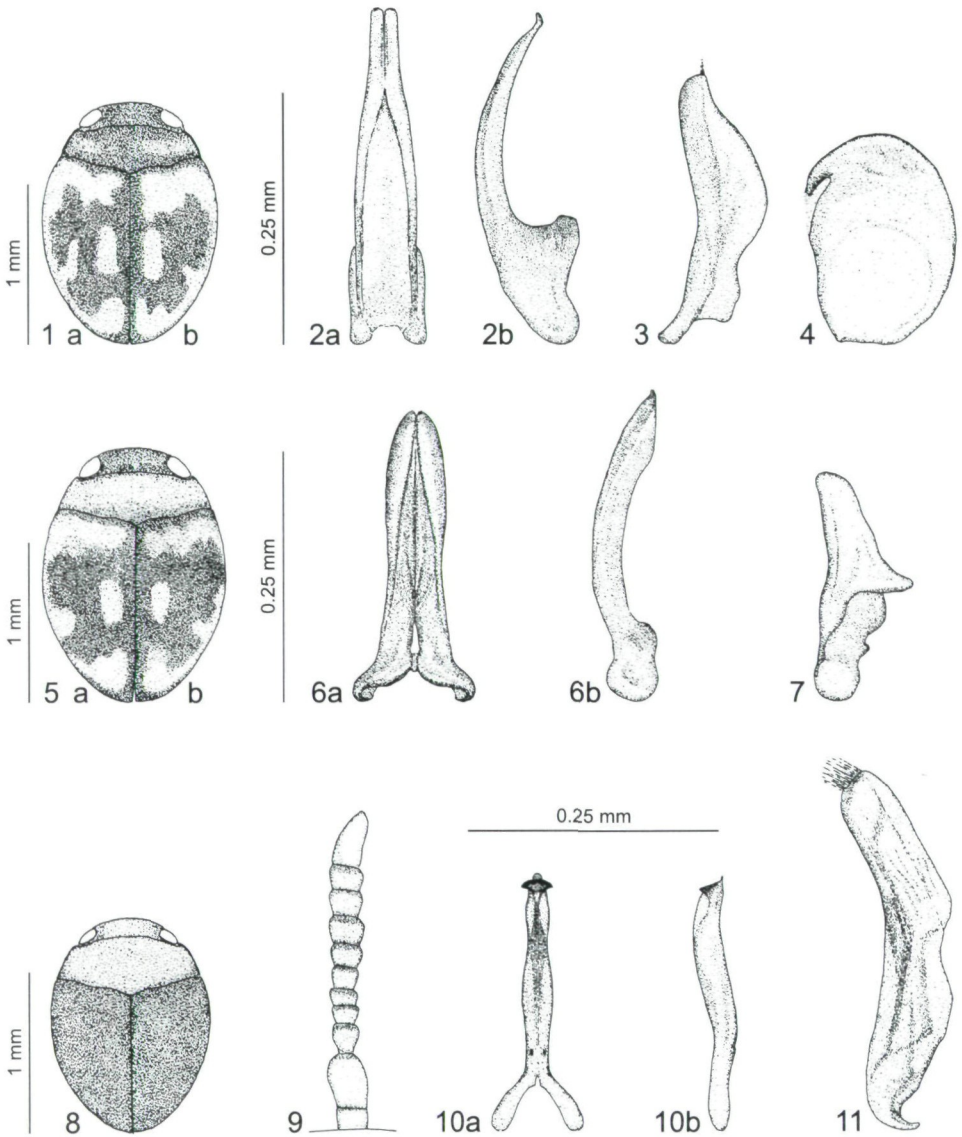
DESCRIPTION: Habitus (fig. 8): body oblong-oval, slightly rhomboid, dilated at the shoulders, strongly convex.

Length of body: 1.3 - 1.4 mm, width: 0.8 - 1.0 mm.

Head: rufo-testaceous; clypeus not bordered; finely, moderately sparsely and regularly punctured, a row of coarser punctures alongside the eyes; anterior half finely microreticulate. Antennae (fig. 9) flavo-testaceous, rather short and plump, similar to those of *M. pasiricus*.

Pronotum: rufo-testaceous, indistinctly ferrugineous along the posterior margin; lateral margin finely bordered, regularly rounded; punctures quite coarse, moderately sparse and irregular, some coarser punctures along the posterior margin; without microreticulation.

Elytra: entirely ferrugineous (fig. 8); punctures regular, moderately strong and moderately dense; two longitudinal rows of stronger punctures, particularly the inner one quite distinct and impressed at the base; highly polished and shining; without microreticulation.



Figs. 1 - 4: *Microdytes franzi* sp.n.; 1) body outline and colour pattern, (a) holotype, (b) paratype; 2) penis, holotype, (a) dorsal view, (b) lateral view; 3) left paramere, holotype; 4) spermatheca.

Figs. 5 - 7: *Microdytes holzmanni* sp.n.; 5) body outline and colour pattern, (a) holotype, (b) paratype; 6) penis, holotype, (a) dorsal view, (b) lateral view; 7) left paramere, holotype.

Figs. 8 - 11: *Microdytes mazzoldii* sp.n.; 8) body outline and colour pattern, holotype; 9) left antenna; 10) penis, holotype, (a) dorsal view, (b) lateral view; 11) left paramere, holotype.

Ventral side: epipleura, head and prothorax rufo-testaceous, rest of the ventral side ferrugineous; metacoxae and metasternum regularly, sparsely and moderately coarsely punctured, first two sternites sparsely and finely punctured, rest of the abdomen almost without punctures; without microreticulation.

Legs testaceous.

Male: penis (fig. 10); paramere (fig. 11); without secondary sexual characters.

Female: sclerotized spermatheca not found.

ETYMOLOGY: This species is dedicated to Mr. Paolo Mazzoldi, Brescia.

BIOLOGY: The specimens were collected in very small spring-fed pools.

DISTRIBUTION: Indonesia, Borneo.

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Zusammenfassung

Die Gattung *Microdytes* BALFOUR-BROWNE, die erst kürzlich ausführlich bearbeitet worden war (WEWALKA 1997), umfaßte bisher 30 Arten. Hier werden zwei Arten aus Laos (*M. franzi* sp.n. and *M. holzmanni* sp.n.) und eine Art aus Borneo (*M. mazzoldii* sp.n.) neu beschrieben.

Reference

WEWALKA, G. 1997: Taxonomic revision of *Microdytes* Balfour-Browne (Coleoptera: Dytiscidae). - Koleopterologische Rundschau 67: 13 - 51.

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