

A new species of *Hydroglyphus* Motschulsky, 1853 from the East Sepik Province in Papua New Guinea

(Coleoptera, Dytiscidae, Bidessini)

Lars Hendrich & Michael Balke

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Hydroglyphus karawariensis sp. nov. is described from the Karawari River Lodge in East Sepik Province of Papua New Guinea. The species is well characterised by its size, almost black colouration on dorsal surface, and the form of the male genitalia. It is the second known species of the genus in New Guinea.

Lars Hendrich (corresponding author) & Michael Balke, SNSB – Zoologische Staatssammlung München, Münchhausenstr. 21, 81247 München, Germany; e-mail: hendrich@snsb.de

Introduction

The genus *Hydroglyphus* Motschulsky 1853 is predominantly tropical, and is confined to the Palaearctic, Afrotropical, Oriental and Australasian regions. It includes 92 species (Nilsson & Hájek 2024). The African species were revised by Biström (1986), the Indian ones by Vazirani (1969), whereas the South-east Asian species are still in need for a comprehensive revision. The Australian species were treated by Watts (1978), who re-described all the species then known and added two new ones. Later, Hendrich (1999) described *H. balkei* from northern Australia, adding a modified key to all 10 Australian species. Finally, Hendrich et al. (2022) reported the first records of the Australian diving beetle *H. godeffroyi* (Sharp, 1882) in southern New Guinea.

The aim of this work is to describe a new species of the genus *Hydroglyphus*, collected in East Sepik Province in Papua New Guinea in 1983 by A. C. Messer and borrowed by the authors from the National Museum of Natural History in Washington. Together with the new species described herein 11 species of *Hydroglyphus* are known from Australia and New Guinea.

Material and methods

The following abbreviations are used: TL, total body length; TL-H, total body length without head; MW, maximum body width. Measurements were taken with a Leica M205 C stereomicroscope.

The diagnosis of the new species is based on the dorsal colouration and the shape of the male genitalia. Prior to dissection, dry specimens were relaxed in hot water for 10 minutes. The genitalia were extracted by inserting an insect pin into the abdominal opening. The median lobe of the aedeagus and the parameres were disarticulated and mounted together with the specimens.

The description of morphological characters follows our previous work on *Hydroglyphus* beetles (Hendrich 1999). Images were taken with a Canon EOS R camera. We used Mitutoyo 10x (habitus) or 20x (genital structures) ELWD Plan Apo objectives. These were attached to a Carl Zeiss Jena Sonnar 3.5/135 MC, used as a focus lens. Illumination with three LED segments SN-1 from Stonemaster. Image stacks were generated with the Stackmaster macro rail (Stonemaster), and images were then assembled with the computer software Helicon Focus 4.77TM on an iMac with a Radeon Pro 5500 XT GPU.



Fig. 1. A. *Hydroglyphus karawariensis* sp. nov., paratype; B. *H. balkei*, Central Queensland, Townsville, Alligator Creek, Australia. Scale bar = 1 mm.

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

NMNH National Museum of Natural History,
Washington, USA
ZSM Staatliche Naturwissenschaftliche Sammlungen Bayerns, Zoologische Staatssammlung München, Munich, Germany

For this study specimens of the following Australasian *Hydroglyphus* species have been examined:

Hydroglyphus balkei Hendrich, 1999: Northern Territories, Queensland (ZSM); *H. basalis* (MacLeay, 1871): Northern Territories, Queensland (ZSM); *H. daemeli* (Sharp, 1882): Northern Territories, Queensland (ZSM); *H. godeffroyi* (Sharp, 1882): Northern Territories, Western Australia, Queensland (ZSM), Indonesia, West Papua (ZSM); *H. grammopterus* (Zimmermann, 1928): Northern Territories, Queensland (ZSM); *H. leai* (Guignot, 1939): Northern Territories, Western Australia

(ZSM); *H. mastersi* (MacLeay, 1871): Queensland (ZSM); *H. orthogrammus* (Sharp, 1882): Western Australia, Pilbara (ZSM); *H. signatus* (Sharp, 1882): Queensland; *H. trifasciatus* (Watts, 1978): Northern Territories, Queensland (ZSM).

Taxonomy

Hydroglyphus karawariensis sp. nov.

Type locality. Karawari Lodge, 4°36'25"S 143°30'5"E, East Sepik Province, Papua New Guinea.

Type material. Holotype: Male: "Papua New Guinea / East Sepik Province / Amboin Patrol Post / Karawari Lodge / 13 Jan.1983, A.C. Messer" [white printed label], "Holotype / *Hydroglyphus / karawariensis* sp. n. / Hendrich & Balke des. 2024" [red printed label] (NMNH). – Paratypes: 25 specimens, same label data as holotype (NMNH, ZSM). All paratypes are provided with a red printed paratype label.



Fig. 2. *Hydroglyphus karawariensis* sp. nov. Median lobe, ventral (A) and lateral view (B), and left (C) and right (D) paramere. Scale bar=0.2 mm.

Description

Medium sized, oblong, almost black *Hydroglyphus*, widest in middle.

Measurements. Holotype: TL=2.4 mm, TL-H=2.1 mm, MW=1.1 mm. Paratypes (N=20): TL=2.35-2.55 mm; TL-H=2.0-2.35 mm; TL-H=1.1-1.2 mm.

Colouration (Fig. 1A). Head completely dark brown. Pronotum anteriorly and posteriorly broadly black, medially testaceous. Elytron completely black. Epipleuron testaceous. Metacoxal plate, metasternum

and visible abdominal segments dark brown to black. Metasternum along midline rufous-testaceous. Legs rufous, with hind legs slightly darkened laterally. Antennomeres 1-11 testaceous.

Sculpture. Punctuation on head fine and sparse, impunctate close to pronotum. Head shiny with distinct microsculpture. Frontolateral depressions distinct. Anterior margin rounded.

Punctuation on pronotum coarse and dense. Pronotum rather shiny with fine to very fine microsculpture. Basolateral striae fairly strongly im-



Fig. 3. *Hydroglyphus balkei*. Median lobe, ventral (A) and lateral view (B), and left (C) and right (D) paramere. Scale bar=0.2 mm.

pressed. Pronotum broadest at posterior angles, sides rounded, anteriorly more strongly curved inwards than posteriorly. Angle between pronotum and elytra fairly distinct.

Punctuation on elytron coarse and dense, regularly distributed. Elytron finely and partly indistinctly microsculptured. Striae rather weakly impressed. Sutural line distinct from apex to base of elytra.

Ventral side with very fine to fine, partly somewhat indistinct microsculpture. Metacoxal lines almost straight, anteriorly slightly divergent. Metasternum, metacoxal plate and the posterior parts of the ventrites coarse and densely punctured.

Male. Median lobe of aedeagus highly modified and not evenly narrowing towards apex (Fig. 2A). Parameres two segmented and robust (Fig. 2C,D). Protarsomeres 1-3 a little expanded, mesotarsomeres less so.

Female. Pro- and mesotarsi narrower than in male.

Differential diagnosis. The distinct colouration of the dorsal surface distinguishes *H. karawariensis* sp. nov. (Fig. 1A) from most other Australian and New Guinean *Hydroglyphus*. In body shape and dorsal colouration it is closest to *H. balkei* Hendrich,



Fig. 4. Type locality of *Hydroglyphus karawariensis* sp. nov. in Papua New Guinea.

1999 (Fig. 1B) from tropical northern Australia but could easily be separated by its larger size (*H. balkei*: TL = 2.0–2.25 mm), the completely black elytra, and the highly modified form of the median lobe of aedeagus and parameres (Figs 2 and 3).

Etymology. The species is named after the Karawari River in East Sepik Province where the specimens has been found. The name is an adjective in the nominative singular.

Distribution. Only known from the type locality in the East Sepik Province of Papua New Guinea (Fig. 4). Most probably more widespread in central Papua New Guinea.

Habitat. Unknown.

- H. daemeli* (Sharp, 1882): NT, WA, QLD, NSW, New Caledonia
H. godeffroyi (Sharp, 1882): NT, WA (Kimberleys, Pilbara), QLD, NSW, New Caledonia, Indonesia: West Papua and Kei Islands
H. grammopterus (Zimmermann, 1928): NT, WA (Kimberleys, Pilbara), QLD, NSW
H. karawariensis sp. nov.: PNG, East Sepik Province
H. leai (Guignot, 1939): NT, WA (Kimberleys, Pilbara), QLD
H. mastersi (MacLeay, 1871): NT, QLD, WA (Kimberleys)
H. orthogrammus (Sharp, 1882): WA (Pilbara)
H. signatus (Sharp, 1882): N QLD, New Caledonia
H. trifasciatus (Watts, 1978): NT, WA, QLD, NSW, New Caledonia

Check list of Australasian species of *Hydroglyphus*

Abbreviations: NT, Northern Territory; WA, Western Australia; QLD, Queensland; NSW, New South Wales; PNG, Papua New Guinea.

- H. balkei* Hendrich, 1999: NT, N QLD
H. basalis (MacLeay, 1871): NT, WA (Kimberleys, Pilbara), QLD, N NSW

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