

Key to species groups of *Hydrovatus*

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Holotypes of all three taxa, kept in TMB, have been examined, and their considerable morphological differences (eg. metacoxal process not incised) make the exclusion of *H. pasiricus* and its variations from *Hydrovatus* necessary. Their location in the Dytiscidae is at present somewhat unclear. Possibly to be placed somewhere among the Hyphydrini-Bidessini. According to Dr. Günther Wewalka of Vienna, the species belongs to the genus *Microdytes* (pers. comm.).

Name confusion

Hydrovatus inequalis Illiger, FENG, 1936:2 (descr., faun.; by mistake, *Hydrotatus*). On the basis of Feng's illustrations I believe that without question, not a question of a *Hydrovatus* species (possibly *Hygrotus*).

ABDUL-KARIM & ALI, 1986:281, 282 uses for comparative purposes the name *H. ferrugineus* Régimbart. The same taxon is keyed in ALI & ABDUL-KARIM (1990:10).

As far as I know, no species with this name has ever been introduced. Possibly the authors above refer to *H. ferrugatus* Régimbart, in this work synonymized with *H. subrotundatus* Motschulsky.

Nomen nudum

GUIGNOT (1945a:313) lists *H. perversus* Guignot as an endemic species of savannahs and steppes in eastern Africa.

No species with that name has ever been described.

OMER-COOPER (1967:62) lists the name *H. persimilis* Guignot among species close to *H. fallax* and *H. badius* (= *H. deserticola* Guignot).

In fact, no species with that name has been thus far described.

6.3. Key to species groups of *Hydrovatus*

Unfortunately I have managed to construct only a tentative key to the species groups. The user of this work is therefore also referred to the descriptions of the 15 species groups introduced below. Only male specimens can generally be determined with the keys inserted after the description of the species groups. The user is, at least in the beginning, advised to control determinations by comparison with illustrations of also other species groups. Correct determination requires, in many cases, correctly named specimens for comparison.

1. Paramere lacks apical hook (Figs 27, 55) (sometimes provided with minute, often vague processes) 2
- Paramere with well-sclerotized apical hook (Figs 274, 409) (hook sometimes modified but always well-sclerotized) . . . 5
2. Male ventrally with stridulation apparatus (approx. as Fig. 4).
sp. group 15
- Male ventrally without stridulation apparatus 3
3. Male mesotarsal claws asymmetric, extended (Fig. 46).
sp. group 2
- Male mesotarsal claws symmetric, not extended 4
4. Penis (dorsal aspect) narrow (Fig. 101). **sp. group 3**
- Penis (dorsal aspect) broad (Fig. 25). **sp. group 1**
5. Male maxillary palpus modified, flattened and enlarged (Fig. 676).
sp. group 7
- Male maxillary palpus not modified, not enlarged 6
6. Male ventrally without stridulation apparatus 7
(Exceptions lacking stridulation apparatus are in sp.gr. 11:
H. mundus (p. 417); *H. rufescens* (p. 397); *H. suturalis* (p. 438); *H. regimbarti* (p. 444) and in sp.gr. 14: *H. jaechi* (p. 543); *H. agathodaemon* (p. 544)
- Male ventrally with stridulation apparatus (Figs 3–4), or at its location with a glabrous area or with a few strongly built tooth-like processes (Fig. 1032) 12
7. General elytral punctation coarsest in apical half of elytron (Oriental region). **sp. group 5**
- General elytral punctation coarsest in basal half of elytron 8
8. Penis laterally with distinct strengthening lobes (Fig. 767).
sp. group 10
- Penis laterally without distinct strengthening lobes (Figs 635, 679) 9
9. Penis (lateral aspect) from curved base to apex almost straight (Fig. 732) (two species with moderately, downwards curved penis apex, Figs 712, 719). **sp. group 9**
- Penis (lateral aspect) apically distinctly bent downwards (Figs 245, 654). 10
10. Small species (max. length 2.26 mm); penis apex always abruptly downwards bent (Fig. 654) (Oriental region). **sp. group 6**
- Generally bigger species (length 1.62–3.38 mm); penis apex generally more gradually bent downwards (Fig. 245) (if strongly bent downwards, body bigger than max. length of sp. gr. 6) . . . 11

11. Small species (length 1.62–3.08 mm). **sp. group 4**
 – Larger species (length 3.38 mm). **sp. group 8**
12. Apex of penis (dorsal aspect) laterally distinctly expanded (Figs 1095, 1110). **sp. group 12**
 – Apex of penis laterally not distinctly expanded 13
13. Apex of penis broadly truncate (dorsal aspect), often with a distinct constriction near apex (Figs 1233, 1271); general punctation evenly distributed on elytron (exception: *H. sumatrensis* p. 547); male antenna often modified (Fig. 1251) (Oriental region, China, Japan, Australia). **sp. group 14**
 – Apex of penis different (dorsal aspect), sometimes obtuse but never with distinct constriction near apex; general punctation unevenly distributed on elytron (coarser and denser frontally at suture than laterally and apically); male antenna not modified 14
14. Big species (length 3.76–5.28 mm); penis (lateral aspect) without distinct strengthening lobes (Fig. 1202); male protarsal claws symmetric to almost symmetric, not distinctly modified (Africa). **sp. group 13**
 – Small to large (length 1.92–5.02 mm); large species with penis provided with distinct lateral strengthening lobes (Fig. 975) (exception: *H. gravis* p. 380); large species generally with asymmetric male protarsal claws (Fig. 940). **sp. group 11**

6.4. Key to the species

Species group 1 (sp.gr. *pictulus*)

Length of body: 1.80–2.86 mm, breadth: 1.08–1.94 mm. Shape of body globular to slightly elongated. Colouration of dorsal aspect of body varies between unicoloured and distinct dorsal colour pattern.

Head: Frontal outline of male head angular, medially straight, and at least there distinctly margined (Fig. 23). Sometimes margin thickened and in one species male provided with a minute upwards curved process (Figs 30–31). Female head frontally not modified, except in one species medially a little inwardly curved (Fig. 29). Antennae and palpi in both sexes simple.

Ventral side: Stridulatory apparatus absent.

Legs: Claws simple.

Male genitalia: Penis in dorsal view medially broad (Fig. 25). Weakly sclerotized medial part of penis (dorsal view) provided with